DOCKET

No. 07-1601
Vide 07-1607
Title: Burlington Northern and Santa Fe Railway Company, et al., Petitioners
v.
United States, et al.
Docketed: June 25, 2008
Lower Ct: United States Court of Appeals for the Ninth Circuit
Case Nos.: (03-17125, 03-17153, 03-17169)
Decision Date: March 25, 2008
Questions Presented

~~Date~~~	~~~~~~~~Proceedings and Orders~~~~~~~~~~~~~~~~~~~~~~~~~~
Jun 23 2008	Petition for a writ of certiorari filed. (Response due July 25, 2008)
Jun 23 2008	Appendix of Burlington Northern and Santa Fe Railway Company, et al. filed.
Jul 11 2008	Order extending time to file response to petition to and including August 25, 2008, for all respondents.
Jul 25 2008	Brief amici curiae of Chamber of Commerce of the United States, et al. filed. VIDED.
Jul 25 2008	Brief amicus curiae of Association of American Railroads filed.
Aug 25 2008	Brief of respondents United States, et al. in opposition filed. VIDED.
Sep 9 2008	Reply of petitioners Burlington Northern and Santa Fe Railway Company, et al. filed. (Distributed)
Sep 10 2008	DISTRIBUTED for Conference of September 29, 2008.
Oct 1 2008	Petition GRANTED and consolidated with No. 07-1607, and a total of one hour is allotted for oral argument.
Oct 31 2008	Consent to the filing of amicus briefs, in support of either party or neither party, received from counsel for the petitioners in 07-1601. VIDED.
Nov 3 2008	Consent to the filing of amicus briefs, in support of either party or neither party, received from counsel for the petitioners in case 07-1607. VIDED.
Nov 17 2008	Joint appendix filed. Statement of costs received. VIDED.
Nov 17 2008	Brief of petitioners Burlington Northern and Santa Fe Railway Company, et al. filed. VIDED.
Nov 21 2008	Brief amicus curiae of Product Liability Advisory Council, Inc. filed. VIDED.
Nov 24 2008	Brief amicus curiae of Association of American Railroads filed. VIDED.
Nov 24 2008	Brief amici curiae of Chamber of Commerce of the United States, et al. filed. VIDED.
Nov 24 2008	Brief amici curiae of Newmont USA Limited and CanadianOxy Offshore Production Co. filed. VIDED.
Nov 24 2008	Brief amicus curiae of Civil Justice Association of California filed.
Nov 24 2008	Brief amicus curiae of General Electric Company filed. VIDED.
Nov 24 2008	Brief amicus curiae of Washington Legal Foundation filed. VIDED.
Dec 5 2008	CIRCULATED.
Dec 8 2008	SET FOR ARGUMENT ON Tuesday, February 24, 2009
Dec 16 2008	The time for respondent Department of Toxic Substances Control within which to file the brief on the merits is extended to and including December 22, 2008. VIDED.
Dec 17 2008	Brief of respondent United States filed. VIDED. (Distributed)

Dec 22 2008	Brief of respondent California filed. VIDED. (Distributed)
Dec 23 2008	Joint motion for divided argument filed by petitioners. VIDED.
Dec 24 2008	Record received from the U.S.C.A. for the 9th Circuit. (1 envelope)
Dec 31 2008	Record received from the U.S.D.C. for the Eastern District of California. (25 boxes) This record was sent by the U.S.C.A. for the 9th Circuit.
Jan 12 2009	Motion for divided argument filed by petitioners GRANTED. VIDED.
Jan 16 2009	Reply of petitioners Burlington Northern and Santa Fe Railway Company, et al. filed. VIDED. (Distributed)
Feb 24 2009	Argued. For petitioner in No. 07-1607: Kathleen M. Sullivan, New York, N.Y. For petitioners in No. 07-1601: Maureen E. Mahoney, Washington, D.C. For respondents: Malcolm L. Stewart, Deputy Solicitor General, Department of Justice, Washington, D.C.

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PETITION FOR WRIT OF CERTIORARI

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Supreme Court, U.S.
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No.

In the Supreme Court of the United States

THE BURLINGTON NORTHERN AND SANTA FE RAILWAY COMPANY, and UNION PACIFIC RAILROAD COMPANY,

PETITIONERS,

V.

UNITED STATES OF AMERICA

AND

DEPARTMENT OF TOXIC SUBSTANCES CONTROL, STATE OF CALIFORNIA,

RESPONDENTS.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

PETITION FOR A WRIT OF CERTIORARI

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QUESTION PRESENTED

The Comprehensive, Environmental, Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. §9601 et seq., allows the government to obtain reimbursement for the costs of remediating hazardous waste sites from the owners and operators of land on which a disposal of hazardous substances has occurred. Because even passive landowners may be subjected to CERCLA liability, Congress removed language from early CERCLA bills mandating joint and several liability for multiple defendants who own or operate a particular site. In the present case, the Ninth Circuit nevertheless imposed joint and several liability for the entire cost of a facility's remediation on two landlords, even though they owned only a portion of the overall site for a fraction of its period of operation, and the parcel they owned required no remediation. The question presented is:

Whether the Ninth Circuit erred by reversing the district court's reasonable apportionment of responsibility under CERCLA, and by adopting a standard of review and proof requirements that depart from common law principles and conflict with decisions of other circuits.

LIST OF PARTIES AND RULE 29.6 STATEMENT

BNSF Railway Company ("BNSF"), whose name changed from The Burlington Northern and Santa Fe Railway Company, is the successor in interest to the Atchison Topeka and Santa Fe Railway Company. BNSF has publicly traded debt securities listed on the New York Stock Exchange. BNSF is also a wholly-owned subsidiary of Burlington Northern Santa Fe Corporation, which is a publicly held corporation whose common stock is listed on the New York Stock Exchange, Chicago Stock Exchange, and Pacific Exchange. Approximately 18.5% of the stock of Burlington Northern Santa Fe Corporation is owned by Berkshire Hathaway Inc.

Union Pacific Railroad Company ("UPRR") was formerly known as Southern Pacific Transportation Company. Union Pacific Corporation owns 62.6% of UPRR's stock, and also wholly owns Southern Pacific Rail Corporation. Union Pacific Corporation has issued publicly traded securities, and UPRR has issued publicly traded debt securities.

Also petitioning from the decision below, by separate petition for certiorari, is:

Shell Oil Company ("Shell"), a wholly owned subsidiary of Shell Petroleum, Inc.

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OPINIONS BELOW

The amended opinion of the Ninth Circuit and the dissent from the denial of rehearing en banc (Pet.App.-1a–81a) are reported at 520 F.3d 918. The prior opinion of the Ninth Circuit (Pet.App.-263a–310a) is reported at 502 F.3d 781. The amended findings of fact and conclusions of law of the district court for the Eastern District of California (Pet.App.-82a–262a) are reported at 2003 WL 25518047.

JURISDICTION

The Ninth Circuit entered its opinion denying rehearing on March 25, 2008. (Pet.App.-1a). This Court has jurisdiction under 28 U.S.C. §1254(1).

CONSTITUTIONAL AND STATUTORY PROVISIONS INVOLVED

The Appendix (Pet.App.-311a–18a) reproduces the relevant text of the Comprehensive, Environmental, Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. §9601 et seq.

STATEMENT OF THE CASE

CERCLA imposes retroactive liability for environmental cleanup on multiple "responsible parties," including the actual polluters but also landowners who did not contribute to the contamination on their property. Courts have uniformly held that CERCLA liability is joint and several only if there is no reasonable basis for apportioning causal responsibility, under principles outlined in §433A of the Restatement (Second) of Torts (1965) ("the Restatement"). This case involves the

relative responsibility of the 29-year operator of an agricultural chemical distribution facility, and two uninvolved landlords who leased that operator a small parcel of land, for approximately half the period, for use as a parking lot and for storage of empty cans and drums. The district court made detailed findings supporting his determination that the landowners' liability could be reasonably (indeed, conservatively) apportioned by reference to the relative sizes of the land parcels, the length of time each was used, and the particular chemicals disposed of on each. After a 27-day trial, the district court made extensive findings and concluded that "[t]he concept that a passive owner of a contiguous parcel, not representing more than 19% in area of a CERCLA site, operated less than 44% of the time, where substantially smaller volumes of hazardous substance releases occurred, should be strictly liable for the entire site remediation ... takes strict liability beyond any rational limit." Pet.App.-245a.

The Ninth Circuit reversed, holding that apportionment requires "records" showing with "precision" exactly what chemicals were spilled, where, and when. Pet.App.-41a. The panel conceded that such records would rarely if ever exist, and that landowners will have a far harder time avoiding joint and several liability under its test than other defendants who were directly involved in causing the contamination. *Id.*

The Ninth Circuit's proof requirements are inconsistent with the governing common law principles, which require only a factual basis for an approximate practical apportionment, upon reasonable assumptions determined by the trier of fact. The panel acknowledged a direct conflict with the Fifth Circuit's decision in *In re Bell Petroleum Services, Inc.*, 3 F.3d

889, 904 & n.19 (5th Cir. 1993), which permits apportionment on the basis of reasonable assumptions even if records are "incomplete," so long as a factual basis exists for a "rough approximation" of each defendant's causal responsibility for the harm. Pet.App.-46a n.32. The panel also acknowledged a separate circuit split over the standard of appellate review, and whether the possibility of apportionment is a question of fact or law. Pet.App.-35a. Eight judges dissented from the denial of rehearing *en banc*, noting that the panel had "applie[d] CERCLA in a novel and unprecedented way to impose impossible-to-satisfy burdens on CERCLA defendants," and that its "unreasonable application of CERCLA apportionment law imposes joint and several liability on CERCLA defendants where Congress did not so intend." Pet.App.-57a (footnote omitted).

This case involves several acknowledged circuit splits on an issue of national importance. This Court has never addressed the basic principles governing apportionment under CERCLA, and the issue involves the proper allocation of hundreds of billions of dollars of liability at thousands of cleanup sites nationwide. Certiorari is warranted.

A. Statutory Background

CERCLA was enacted in 1980. It effected a radical change in the law by imposing retroactive strict liability for environmental cleanup costs on four categories of potential responsible parties ("PRPs"). 42 U.S.C. §9607(a)(1)–(4).[1] Even "'innocent' private

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[1] CERCLA also established the "Superfund," and California established a similar account, to fund remediation of contaminated sites where the responsible party is insolvent or no longer exists.

parties .... not responsible for contamination," such as an uninvolved landlord, "may fall within the broad definitions of PRPs." *United States v. Atl. Research Corp.*, 127 S. Ct. 2331, 2336 (2007).

CERCLA is silent, however, as to how responsibility for cleanup costs should be apportioned between multiple PRPs. Early draft bills would have imposed joint and several liability, but many Senators criticized that solution because it threatened to "impose financial responsibility for massive costs and damages awards on persons who contributed minimally (if at all) to a release or injury." *See* 126 Cong. Rec. 30972 (1980). Both houses' bills eventually eliminated language concerning joint and several liability "to avoid a mandatory legislative standard applicable in all situations which might produce inequitable results in some cases." *United States v. Chem-Dyne Corp.*, 572 F. Supp. 802, 808 (S.D. Ohio 1983). Senator Jennings Randolph, sponsor of the bill, explained that "we have deleted any reference to joint and several liability, relying on common law principles to determine when parties should be severally liable." 126 Cong. Rec. 30932 (1980).

This Court has never determined whether or when CERCLA creates joint and several liability, *see Atl. Research*, 127 S. Ct. at 2339 n.7, but the leading early case held that Congress intended the scope of liability to be governed by "traditional and evolving principles of common law," articulated in §433A of the

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42 U.S.C. §9611; Cal. Health & Safety Code §§25300–25395.45; *see also* H.R. Rep. No. 96-1016(1) pt. 1, at 34 (1980) (defendant establishing divisibility pays only the portion of costs reasonably attributable to him).

Restatement. *Chem-Dyne*, 572 F. Supp. at 808. The legislative history to the 1986 Superfund Amendments and Reauthorization Act endorsed this approach, *see* H.R. Rep. No. 99-253(I) at 74 (1985), *as reprinted in* 1986 U.S.C.C.A.N. 2835, 2856, demonstrating that Congress twice rejected the opportunity to impose a mandatory joint and several liability scheme. The principles of the Restatement have been followed by all subsequent courts to address the issue.

The Restatement provides that "[d]amages for harm are to be apportioned among two or more causes where: (a) there are distinct harms, or (b) there is a reasonable basis for determining the contribution of each cause to a single harm." Comments explain various methodologies providing a "reasonable basis" for apportionment. One illustration suggests that "where the cattle of two or more owners trespass upon the plaintiff's land and destroy his crop," the resulting damages should "be apportioned among the owners of the cattle, on the basis of the number owned by each, and the reasonable assumption that the respective harm done is proportionate to that number." Restatement §433A illus. d. Another example suggests that if two defendants "operating the same plant, pollute a stream over successive periods," responsibility should be apportioned in proportion to the length of time each operated the facility—on the premise that total pollution would be roughly proportionate to length of operation. *Id.* cmt. c. If no "reasonable basis" for apportionment can be identified, even after making "reasonable assumption[s]" like these, the Restatement calls for joint and several responsibility.

B. Factual and Procedural Background

1. Operations at the Arvin Site

This case involves an agricultural chemical facility in Arvin, California. The facility was owned by Brown & Bryant ("B&B"), a now-defunct company that operated in Arvin from 1960 until 1988. Pet.App.-12a, 16a n.9. B&B used its Arvin facility to store, mix, and load into application rigs agricultural chemical products produced by manufacturers such as Shell Oil Company ("Shell"), which B&B sold to local growers. Pet.App.-13a. B&B stored and distributed the weed killer dinoseb, as well as the soil fumigants D-D and Nemagon, which are injected into soil and rapidly disperse to kill nematodes (microscopic worms that attack crop roots). *Id.*

B&B was a "sloppy" operator that actively contaminated its facility and the underlying groundwater. Pet.App.-130a. Leaks occurred when B&B employees transferred bulk shipments of D-D into storage tanks, and when "nurse tanks" were inspected or rinsed out. Pet.App.-92a. Spills also occurred on a daily basis when B&B transferred its products from storage tanks to application rigs. Pet.App.-93a; SER56–57.[2] The storage of these three chemicals also caused leakage from their containers. D-D in particular is a corrosive solvent that "caused numerous tank failures and spills" in the 1960s. Pet.App.-115a.

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[2] SER refers to the Supplemental Excerpts of Record filed by the Railroads in the Ninth Circuit. ER refers to the Joint Excerpts of Record filed by the United States and the State of California.

The entire site was graded toward a drainage pond in the southeast corner of the facility, which collected run-off. ER68; Pet.App.-12a. In 1960, B&B installed a sump, into which as much as 2,000 to 4,000 gallons of rinse water was dumped per month, in the center of its parcel. Pet.App.-111a; ER68, SER331, SER342–43, SER316, SER267, SER365, SER367. The sump was connected to the pond with a pipe. Neither the sump nor the pond were lined until 1979. Pet.App.-111a, 95a. The sump and pond increased the rate at which these chemicals, which were naturally volatile and might otherwise have evaporated, leached into groundwater. Pet.App.-104a–05a.

2. Site Characteristics

Beginning in 1975, for the last thirteen years of the Arvin facility's operation, B&B leased an adjacent 0.9-acre parcel jointly owned by Atchison, Topeka, & Santa Fe Railroad Co. (the predecessor in interest to Burlington Northern & Santa Fe Railway Co.) and Southern Pacific Transportation Co., (the predecessor in interest to Union Pacific Railroad Co. ("the Railroads"). Pet.App.-12a. Including the Railroads' small parcel, B&B's facility occupied 4.7 acres of land. *Id.* The Railroads' parcel was located at the westernmost portion of the Arvin site, adjacent to B&B's warehouse and farthest from the pond in the southeastern corner. Pet.App.-12a.

The Railroads did not have any role in B&B's operations, and all parties agree that the only basis for imposing CERCLA liability against the Railroads is the "owner" provision of 42 U.S.C. §9607(a). Because the parcel leased from the Railroads was used principally for parking fertilizer rigs, Pet.App.-12a, and secondarily for storing empty cans and drums,

Pet.App.-94a, the overwhelming majority of the chemical disposals occurred on parts of the facility not owned or controlled by the Railroads. Pet.App.-247a–48a.

C. District Court Proceedings

In the early 1980s, California's Department of Toxic Substances Control ("DTSC") found evidence of soil and groundwater contamination at B&B's facility. Pet.App.-14a. In 1988, DTSC ordered B&B to correct the violations and the cost drove B&B out of business. In 1989, the Environmental Protection Agency ("EPA") listed the B&B facility on the CERCLA National Priorities List. *See* 42 U.S.C. §9605; 40 C.F.R. pt. 300, app. B. The contamination on the Railroads' parcel did not require remediation, but in 1991 the EPA ordered the Railroads to take measures to prevent future contamination. Pet.App.-14a–15a. In 1996, the United States and California filed suit under CERCLA against the Railroads and Shell for reimbursement of investigation and clean-up expenses. Pet.App.-15a.

After a bench trial, the district court issued what the Ninth Circuit later described as an "exceedingly detailed 185-page" opinion. It found the Railroads liable as owners, and Shell liable as an entity that "arranged" for the disposal of hazardous substances. *See* 42 U.S.C. §9607(a)(3). The court found that the United States incurred response costs of $7,809,683.46 as of June 30, 1997, not including interest or attorneys fees. Pet.App.-230a. As of March 31, 1998, California incurred response costs of $401,827.81. *Id.* The court also entered a declaratory judgment establishing liability for future costs. Pet.App.-231a.

1. District Court Findings

The district court made extensive findings relevant to the apportionment inquiry, the vast majority of which were held to be "factually correct" by the Ninth Circuit. *See* Pet.App.-42a.

Activities on the Railroads' Parcel. The district court found that the overwhelming majority of B&B's chemical disposals occurred on land not owned by the Railroads. Pet.App.-247a–48a. The "Railroad parcel was only used for vehicle and equipment storage, washing and limited loading-unloading of agricultural chemicals, not active operations or maintenance." Pet.App.-247a. Drums of dinoseb and empty cans of pesticide were stored on the Railroads' parcel, which occasionally resulted in small leakages. Pet.App.-93a–95a. Nemagon drums were also stored on the Railroad parcel, after being emptied of their contents on the B&B parcel. Pet.App.-95a. The district court found that there was only "slight" D-D contamination on the Railroad parcel "as a result of D-D rig and nurse tank storage" there. Pet.App.-251a.

The activities that caused most of the spills—including mixing, formulating, unloading, and transporting chemicals—were predominantly performed on B&B's parcel. Pet.App.-247a–48a. The court also noted that "[i]t is undisputed that the pond, the sump, and the dinoseb spill area, all of which are located on the B&B parcel, were and are the primary sources of the groundwater contamination at the Site." Pet.App.-104a. "[T]he overwhelming contaminant mass is on and under the B&B parcel." Pet.App.-102a.

Timing Of Spills. B&B did not begin leasing the Railroad parcel until 1975, fifteen years into its operation of the Arvin facility. The district court found

that "[i]n the first twenty years of its operations, B&B took almost no precaution to prevent the release of hazardous agricultural chemicals into the environment." Pet.App.-130a. B&B lined the pond and sump in 1979, and began taking greater environmental precautions. Pet.App.-111a.

Chemical Properties of Substances. Not all hazardous substances spills reach the groundwater. D-D and Nemagon are volatile chemicals, designed to evaporate rapidly when injected into soil. The district court found, for example, that "[i]n the absence of added water, a spill of at least 500 gallons (on bare soil) or in excess of 10,000 gallons (on intact asphalt), of a volatile chemical such as 1,2-DCP," one of the constituents of D-D, "would be required on the Railroad parcel, before a spill would reach groundwater in concentrations sufficient to require a remedial response." Pet.App.-98a–99a. "There is no evidence that a single spill of that magnitude ever occurred on the Railroad parcel." Pet.App.-99a.

But while chemicals like D-D and Nemagon "will rapidly volatilize and 'fume' when injected into the soil, or spilled onto the ground, the pure phase D-D which was rinsed into the sump" on the B&B parcel and then flowed directly into the pond "could not readily volatilize due to the pressure of the water overlying it." Pet.App.-105a.

Migration of Spilled Chemicals. The groundwater at the site is divided into three zones, and the nearest drinking water well draws water from the C-zone, or deepest level of groundwater. Pet.App.-87a. Disposals at the Arvin site have contaminated the A-zone, and some of that contamination has reached the

B-zone. The B- and C-zones are separated by an impermeable clay layer. *Id.*

Migration from a surface release is confirmed by sampling results showing a vertical trail of contamination into the groundwater and increased concentrations of contamination in the groundwater. The district court found that soil borings on the Railroad parcel and "[t]he size and shape of the groundwater plumes" indicate that any surface spills on the Railroad parcel did not contribute to the principal groundwater contamination, and that the "most likely explanation" for groundwater contamination below the southern portion of the Railroad parcel is groundwater flow from the sump on B&B's property. Pet.App.-103a–04a. The court found that only a limited amount of contaminated groundwater in the northern portion of the Railroad parcel was likely caused by spills on the Railroad parcel. Pet.App.-112a. It also found that the levels of contamination even in the A-zone groundwater beneath the Railroad parcel are "too low to require remediation." Pet.App.-97a.

According to the United States and California, because a small pipe allowed water on the Railroads' parcel to drain onto B&B's parcel, surface water on the Railroads' parcel could have reached the pond on B&B's parcel. The court found the scientific evidence "inconclusive," but held that "the presence of agricultural chemical spills on the Railroad parcel" contributed to the need to incur costs under CERCLA. Pet.App.-112a–13a.

2. District Court's Apportionment Holding

The district court reasoned that "[t]he burden to show an appropriate basis for apportionment is heavy,"

and that "[t]he evidence supporting divisibility must be concrete and specific." Pet.App.-249a, 237a. The court concluded, however, that the Railroads had satisfied that burden and shown a reasonable basis for apportionment under the Restatement guidelines. It held that "[t]his is a classic 'divisible in terms of degree' case, both as to the time period in which defendants' conduct occurred, and ownership existed, and as to the estimated maximum contribution of each party's activities that released hazardous substances that caused Site contamination." Pet.App.-239a.

The district court apportioned the harm by multiplying the percentage of the overall land that was owned by the Railroads (19.1%), the percentage of the 29 years of B&B's operations during which it leased land from the Railroads (45%), and the percentage of overall site contamination attributable to the two chemicals that meaningfully contaminated the Railroads' land (66%), for an initial allocation of 6%. Pet.App.-251a–52a. It reasoned that an allocation based on these reasonable assumptions was conservative, in the sense that, if anything, it overstated the Railroads' responsibility. "[I]t is indisputable that the overwhelming majority of hazardous substances were released from the B&B parcel," and "[r]elatively fewer activities that could result in releases were conducted on the Railroad parcel." Pet.App.-247a–48a. Indeed, "considerable evidence of the relative levels of activity and number of releases on the two parcels [indicated that] the Railroad parcel *could not have contributed to* more than 10% of the volume or mass of the overall site contamination resulting from B&B's hazardous substance-release producing activities." Pet.App.-252a

(emphasis added). Even allowing for "calculation errors up to 50%," there is "no theory of release of contaminants" under which the Railroads could be causally responsible "for more than 9%" of the overall harm. *Id.* The court therefore increased its initial 6% apportionment figure by half, assigning 9% of the total liability to the Railroads. *Id.* The court also held Shell liable for 6% of the total harm based on the percentage of leakages on the facility that involved Shell's products. B&B, although insolvent, was assigned 100% joint and several liability. Pet.App.-16a.

The district court concluded that "[t]he concept that a passive owner of a contiguous parcel, not representing more than 19% in area of a CERCLA site, operated less than 44% of the time, where substantially smaller volumes of hazardous substance releases occurred, should be strictly liable for the entire site remediation ... takes strict liability beyond any rational limit." Pet.App.-246a.

D. The Ninth Circuit's Opinions

The Ninth Circuit issued an opinion on March 16, 2007. It amended that opinion immaterially in September 2007, and then more substantially in March 2008, in response to a petition for rehearing *en banc*.

1. The September 2007 Opinion

The Ninth Circuit's initial opinion reversed the district court's apportionment and imposed joint and several liability on the Railroads and Shell.

The Ninth Circuit acknowledged a conflict over the appellate standard of review. The Fifth and Eighth Circuits review *de novo* "whether there is a reasonable basis for apportioning the harm," and then for clear error "precisely how damages are to be divided." Pet.App.-288a. The Sixth Circuit reviews the entire

inquiry as a question of fact. The Ninth Circuit purported to adopt the Fifth and Eighth Circuit standard, with the "refinement," suggested by a *dissenting* judge in one of the Fifth Circuit cases, that "whether the party with the burden of proof met that burden" is always a question of law reviewed *de novo*. Pet.App.-288a–89a.

The Ninth Circuit held that the apportionment principles outlined in §433A of the Restatement are a "poor fit" that require various modifications to comport with the "'super-strict' nature of CERCLA." Pet.App.-278a–79a. The court of appeals noted that the Restatement standard "works nicely" and is "relatively straightforward" when the "defendants are all polluters themselves," so long as the court "can estimate with some confidence the amount of waste that each defendant disposed of" and "has a basis for determining that the extent of contamination is proportional to" disposal. Pet.App.-281a. The panel repeatedly stated that a *landowner* can prove divisibility of harm, however, "only by demonstrating that portions of the contamination are in no respect traceable to the portion of the facility that the landowner owned at the time of disposal." Pet.App.-282a; *see also* Pet.App.-291a (same).

The panel held that apportionment in proportion to land area was a "'meat axe' approach," because B&B's usage of the Railroad parcel as a parking and storage lot may have had the "synergistic" effect of enabling B&B to purchase more chemicals and consequently process and spill a higher volume of contaminants *on its own land*. Pet.App.-294a, 293a. The court of appeals then (inconsistently) acknowledged that comparisons of "the amount of chemicals stored,

poured from one container to another, or spilled on each parcel" might have been "pertinent." Despite the district court's extensive findings about precisely those issues, however, the Ninth Circuit stated that "none of this data is in the record." Pet.App.-293a–94a. The Ninth Circuit faulted the Railroads for failing to produce, for example, "records that separate out, with any precision, the amount of toxic chemicals stored on one part of [the] facility"—while also acknowledging that such records "would have had little utility to B&B ... and none to the Railroads," and that "such information is, as a practical matter, not available for periods long in the past." Pet.App.-294a.

The court of appeals similarly overturned the district court's temporal apportionment, reasoning that it "assumes constant leakage on the facility as a whole or constant contamination traceable to the facility as a whole for each time period," and that "no evidence suggests that to be the case." Pet.App.-295a. Again, the panel ignored the district court's finding that B&B was more careless "[i]n the first twenty years of its operations," which indicates that an assumption of "constant contamination" is reasonable or even conservative. Pet.App.-130a Finally, the panel held that the district court committed a "factual error" in determining that any D-D contamination on the Railroad parcel was too "slight" to contribute to the groundwater contamination that required remediation. Pet.App.-295a, 251a. The panel wrote that there "is no evidence as to which chemicals spilled on the parcel" and "there *is* evidence that there may well have been leakage on the Railroad parcel of D-D." Pet.App.-295a.

In conclusion, the panel again acknowledged that a landlord often "will not be able to prove in any detail

the degree of contamination traceable to activities on its land," and that "[t]he net result of our approach to apportionment ... may be that landowner PRPs, who typically have the least involvement in generating the contamination, will be the least able to prove divisibility." Pet.App.-296a. The panel thought that outcome acceptable because CERCLA is "not ... concerned with allocation of fault" and because joint and several liability should be "the norm" in order "to assure, as far as possible, that *some* entity with connection to the contamination picks up the tab" rather than the taxpayers. *Id.* The panel expressly recognized that there is "something of a circuit split on the degree of specificity of proof" necessary for apportionment, because the Fifth Circuit has "permitted informal estimates or data rather than more exact calculations." Pet.App.-299a n.29. But it thought that conflict not outcome-determinative here because "the district court's extrapolations could not be upheld under even a forgiving standard." Pet.App.-300a.

The panel also held that Shell is strictly liable as an "arranger," and reversed the district court's apportionment analysis (for reasons similar to those deployed against the Railroads) to hold Shell jointly and severally liable. Pet.App.-300a–09a.

2. The Amended Opinion and Dissent from the Denial of Rehearing En Banc

The Railroads and Shell sought *en banc* review. In response, the panel amended its opinion to eliminate some of its obviously incorrect statements, but did not modify its basic reasoning or conclusions. *See* Pet.App.-3a–10a. For example, the panel removed all references to "super-strict liability" or the phrase

"perfect information," and added a footnote stating that, "if adequate information is available, divisibility may be established by 'volumetric, chronological, or other types of evidence.'" Pet.App.-3a–4a, 9a, 24a. But the Ninth Circuit retained all of the language and analysis rejecting the district court's reasonable basis for geographic and temporal apportionment, and maintained the requirement that landowners produce forms of documentary evidence that they have no reason to possess. Pet.App.-40a–41a.

Eight judges of the Ninth Circuit dissented from the denial of rehearing *en banc*, writing that the panel's apportionment reasoning "applies CERCLA in a novel and unprecedented way to impose impossible-to-satisfy burdens on CERCLA defendants." Pet.App.-57a. The dissenters concluded that the panel's discussion of the standard of review was "sleight of hand," and that its opinion "effectively ... disregard[s]" the Restatement test for apportionment. Pet.App.-65a, 59a. In apportioning liability for destroyed crops in proportion to the ownership of escaped cows, for example, "the Restatement, unlike the panel, does not require 'adequate records' of the harm caused by each animal; the farmer is not required to stand by his crop at all times and meticulously record each step taken by each animal, to trace the harm done back to the individual cattle owners." Pet.App.-69a–70a. "Indeed," the dissenters explained, "this is precisely what the 'reasonable basis' standard is designed to avoid ...." Pet.App.-69a. The dissenters cited both the Fifth and Eighth Circuits for the proposition that it is "reasonable to assume that each year of ownership caused an equal amount of contamination, even though the contamination may have been worse in some years

than in others." Pet.App.-73a (citing *Bell Petroleum*, 3 F.3d at 903–04); *United States v. Hercules, Inc.*, 247 F.3d 706 (8th Cir.), *cert. denied*, 534 U.S. 1065 (2001).

The dissenters also explained that "[t]he district court's findings of fact, which the panel does not find to be clearly erroneous, contradict the panel's appellate factfinding." Pet.App.-70a. For example, "the district court's assumption of constant contamination over the entire period not only provides a reasonable basis to apportion liability, but, if anything, *overestimates* the contamination attributable to the Railroad parcel" because of the district court's finding that B&B took steps to reduce contamination after leasing the Railroad parcel. Pet.App.-73a.

The dissenters concluded that "[i]f this evidence does not provide a 'reasonable estimate' for apportionment of liability, I do not see how—short of 'perfect information' sufficient to trace every molecule of pollution to the landlord's parcel—apportionment could ever be possible under CERCLA." Pet.App.-59a.

REASONS FOR GRANTING THE WRIT

As the eight dissenters from denial of rehearing *en banc* explained, the Ninth Circuit's opinion adopts proof requirements for apportionment of harm under CERCLA that are so onerous and unrealistic that liability will almost never be apportioned. The Ninth Circuit made no secret of its motivation: to ensure that CERCLA liability is essentially always joint and several, so that EPA and the States can always collect the "orphan" shares of any insolvent PRPs from private parties rather than spreading those costs across society as a whole. The Ninth Circuit also candidly admitted that its approach to apportionment

perversely punishes the least culpable PRPs while permitting others with more direct involvement in the contamination to escape joint and several liability if they keep detailed enough records.

The Ninth Circuit's demand for precise documentation, and its rejection of apportionment on the basis of reasonable assumptions, conflicts with the Restatement principles embraced by every other circuit, and particularly with the Fifth Circuit's decision in *Bell Petroleum*. Its belief that those Restatement principles must be distorted to ensure that government agencies never have to absorb "orphan" cleanup costs also conflicts with decisions of the Fifth and Eighth Circuits, and with all available evidence of Congress's intent. The Ninth Circuit's approach to appellate review conflicts with several other circuits by according essentially no deference to the district court's apportionment decision and factual findings. And, as explained in detail in the separate petition filed by Shell, its interpretation of "arranger" liability under CERCLA conflicts with other circuits.

Liability must be apportioned when reasonable assumptions can be used to approximate a defendant's contribution to the harm. Where, as here, a district court has carefully analyzed specific and concrete evidence, based its determination on reasonable assumptions, and calculated the maximum possible contribution of a PRP to the environmental harm, deference should be afforded to that apportionment decision.

This Court should grant this petition as well as the separate petition for certiorari filed by Shell, and consolidate both petitions for argument.

I. THE NINTH CIRCUIT'S DECISION CONFLICTS WITH GOVERNING COMMON LAW PRINCIPLES AND THE DECISIONS OF OTHER CIRCUITS

A. The Ninth Circuit's Proof Requirements Are Inconsistent With Restatement Principles

Congress chose to leave the question of how CERCLA costs would be divided or apportioned to the courts, applying evolving common law principles. Following the seminal decision in *Chem-Dyne*, every court to address these issues has agreed that the relevant principles are embodied in §433A of the Restatement. The decision in this case marks a dramatic departure from those principles, in the service of the Ninth Circuit's misguided and incorrect view of the policies underlying CERCLA.

The Ninth Circuit faulted the district court for relying on "simplistic" assumptions, including that the Railroads' responsibility for the overall contamination was roughly proportional to the size of their parcel and the time period it was leased. But the Restatement expressly contemplates reliance on "reasonable assumption[s]," such as the assumption that the damage done by escaped cows will be roughly proportional to their numbers (comment d). Individual cows certainly act differently, but those differences are not likely to matter in the aggregate and simply cannot be reconstructed from any form of evidence likely to be available. The Restatement also expressly endorses the reasonable assumptions that environmental damage to a polluted stream is roughly proportional to the volume of pollution discharged by each defendant

(comment d) or the length of time each operated a polluting plant (comment c).

The district court's assumptions here were at least as reasonable as the Restatement assumptions and supported by extensive findings. For example, the district court did not simply assume that contamination was evenly distributed. It found that "[r]elatively fewer activities that could result in releases were conducted on the Railroad parcel," and that "the predominant activities conducted on the Railroad parcel through the years were storage and some washing and rinsing" of equipment, whereas "[m]ixing, formulating, loading and unloading of ag-chemical hazardous substances, which contributed most of the liability causing releases, were primarily carried out by B&B on the B&B parcel." Pet.App.-247a–48a. Overall, "[t]he volume of the hazardous substance releasing activities on the B&B site is at least ten times greater than" on the Railroad parcel. Pet.App.-179a. The district court also carefully evaluated the expert evidence and determined that the "overwhelming contaminant mass is on and under the B&B parcel," Pet.App.-102a, and that no remediation is necessary at this time on the Railroad parcel, Pet.App.-101a–02a, 112a–13a. Against that backdrop, the district court's assumption that the Railroads' causal share of the harm was proportionate to parcel size was not just reasonable but plainly conservative. The district court made similar findings supporting its division on the basis of time, and its conclusion that the Railroads are

causally responsible for contamination associated with only two of the three chemicals spilled at the facility.[3]

The Ninth Circuit held that CERCLA apportionment requires specific "records that separate out," with "precision," the volume of toxic chemicals stored or spilled on each parcel. The Restatement does not require either "records" or "precision," but contemplates rough apportionment based on reasonable *assumptions*. *See* W. Page Keeton et al., *Prosser & Keeton on The Law of Torts* §52, at 345 (5th ed. 1984) (apportionment requires only "a factual basis ... for some rough practical apportionment").

The Ninth Circuit recognized that the documentation it required will never, "as a practical matter, [be] available for periods long in the past," and that keeping such records "would have had little utility to B&B, the operator of the facility, and none to the Railroads." Pet.App.-41a. The court's requirement of "precis[e]" documentation therefore makes the apportionment contemplated by the Restatement impossible, at least for landlords. As the Ninth Circuit candidly conceded, "[t]he net result of our approach to the apportionment of liability, consequently, may be that landowner PRPs, who typically have the least direct involvement in generating the contamination,

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[3] The Ninth Circuit held that the district court committed a "factual error" by holding the Railroads responsible for only two of the three chemicals, because "there *is* evidence that there may well have been leakage on the Railroad parcel of D-D." Pet.App.-42a. That is a non-sequitur. The district court found that any such leakage was so "slight" and incidental that it could not have reached groundwater or contributed causally to the contamination—particularly in light of the chemical properties of that substance. *Supra*, at 10–11.

will be the least able to prove divisibility." Pet.App.-43a.

EPA's broad discretion to define the boundaries of the "facility" aggravates these problems. By virtue of leasing a small adjoining parcel to B&B, the Railroads were held jointly and severally liable here for contamination *not even occurring on their land*, that the Railroads had no realistic ability to monitor or document, let alone prevent. B&B's activities also occurred in large part before CERCLA was even passed.[4] Congress intended for courts to develop sensible apportionment principles grounded in the common law. Requiring documentation that landowners could not have kept, and had no reason to keep, is inconsistent with the Restatement and completely disregards Congress's wishes.

The Ninth Circuit grounded its rigid insistence on precision and unavailable documentation on a slanted conception of the policy considerations informing CERCLA apportionment. The Ninth Circuit's opinion repeatedly emphasized its belief that joint and several liability must be the norm under CERCLA, and apportionment the rare exception, because the government should not be left "holding the bag for a great deal of money" if one PRP is insolvent. *See*

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[4] Because CERCLA has been interpreted to apply retroactively, PRPs have been held liable for chemical spills that occurred a century ago. *See Continental Title Co. v. Peoples Gas Light & Coke Co.*, 959 F. Supp. 893, 894 (N.D. Ill. 1997) (applying CERCLA retroactively for the disposal of hazardous substances that occurred at a gas plant between 1894 and 1930). Applying the Ninth Circuit's onerous burden of proof in cases where liability is retroactive raises serious questions about CERCLA's fundamental fairness, akin to those underlying this Court's decision in *Eastern Enterprises v. Apfel*, 524 U.S. 498 (1998).

Pet.App.-11a. The Ninth Circuit's standard reflects a strong bias in favor of joint and several liability that departs dramatically from both CERCLA and the Restatement. The court reasoned that any "perceived unfairness" to individual PRPs is a result of the statute's strict liability nature, and that CERCLA seeks first and foremost to assure that cleanup costs fall on "those with *some* connection to the contamination," as opposed to "those with *none*, such as the taxpayers." Pet.App.-33a. "Any court-created structure that would allow PRPs to whittle their share to little or nothing and leave the taxpayers holding the bag," the Ninth Circuit held, "may seem more equitable to some PRPs but would violate the basic structure of the CERCLA statutory scheme." Pet.App.-33a–34a.

The Ninth Circuit's freelance policymaking draws no support from the statute. Congress intentionally chose *not* to mandate joint and several liability under CERCLA, because doing so would "impose financial responsibility for massive costs and damages awards on persons who contributed minimally (if at all) to a release or injury." *See* 126 Cong. Rec. 30972 (1980). Congress chose to leave apportionment of harm to common law principles, rather than to enshrine any overarching policy that protecting the public fisc is more important than fairness to PRPs. It also created the Superfund to cover cleanup costs when the responsible party is missing or insolvent. And the Ninth Circuit's suggestion that the societal burden of cleaning up pollution caused by now-insolvent parties should be borne by private entities who happened to be

in the vicinity of the pollution, rather than by the taxpayers generally, is highly dubious public policy.[5]

The Ninth Circuit also suggested that geographic apportionment was a "'meat-axe' approach" because it assumed that the availability of extra parking and storage space on the Railroad parcel had the "synergistic" effect of enabling B&B to do a higher volume of business, and hence spill more on its own land. Pet.App.-41a, 40a. That reasoning would preclude geographic apportionment in nearly every case, and is inconsistent with the basic premises of landowner liability under CERCLA. The statute imposes strict liability on passive landowners for disposals of hazardous substances on their land—not for disposals of hazardous substances *elsewhere* that were somehow enabled by activities on that land. In *General Electric Co. v. AAMCO Transmissions, Inc.*, 962 F.2d 281, 287–88 (2d Cir. 1992), for example, the Second Circuit explained that the lessor of a service station is not liable for damage caused by his lessee's

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[5] The Ninth Circuit justified that preference by suggesting that PRPs with "some connection" to the contamination probably benefited from it. But the premise of apportionment is that a reasonable basis exists for separating the harm that each PRP is causally responsible for. CERCLA makes the Railroads strictly liable as landowners for any disposals on their own land, but there is no basis in fairness or public policy for holding them responsible for the harm caused by the entirely separate chemical spills *on B&B's land*—or for assuming that the Railroads benefited economically in some way from those spills. And joint and several liability for harms that are beyond a defendant's causal control can actually *decrease* his incentives to make efficient investments in preventing harm. *See, e.g.*, Richard A. Epstein, *Two Fallacies In The Law Of Joint Torts*, 73 Geo. L.J. 1377, 1385–86 (1985); William A. Landes & Richard A. Posner, *Joint and Multiple Tortfeasors: An Economic Analysis*, 9 J. Leg. Stud. 517, 543 (1980).

disposal of hazardous substances generated at the leased premises but disposed of elsewhere. Even if a landlord "had the opportunity or ability to control [its lessee's] waste disposal practices" off the leased property, it has no obligation to do so. *Id.* at 286.

B. The Ninth Circuit's Reasoning Conflicts With Decisions Of Other Circuits

The Ninth Circuit's decision conflicts with decisions of other circuits apportioning liability under CERCLA, and apportioning damages under common law principles in other contexts. Indeed, the Ninth Circuit directly acknowledged a circuit split on the "degree of specificity of proof necessary to establish" a reasonable basis for apportionment. Pet.App.-46a n.32. The Ninth Circuit's suggestion that the circuit split is irrelevant to this case is plainly incorrect. The district court's careful apportionment would have been upheld under the standards applied in at least the Fifth Circuit, and likely other courts as well.

In *Bell Petroleum*, three CERCLA defendants successively operated a chrome-plating shop. The district court held that "there was no method of dividing the liability among the defendants which would rise to any level above mere speculation," in part because "each of the proposed apportionment methods involved a significant assumption factor, inasmuch as records had been lost." 3 F.3d at 894. The Fifth Circuit reversed. After surveying the purposes of CERCLA, the Restatement, and the apportionment case law, the Fifth Circuit held that "[i]f the expert testimony and other evidence establishes a factual basis for making a reasonable estimate that will fairly apportion liability, joint and several liability should not

be imposed in the absence of exceptional circumstances." *Id.* at 903. The court of appeals held that even though "the records of these activities were not complete," and in some cases had been "destroyed," there was "testimony from various witnesses regarding the rinsing and wastewater disposal practices of each defendant, and the amount of chrome-plating activity conducted by each." *Id.* at 903–04 & n.18.

The Fifth Circuit also permitted "significant assumption factors," so long as "those assumptions are well founded and reasonable, and not inconsistent with the facts as established." *Id.* at 904. And it held that precision in the allocation of responsibility is not required. The defendants need not show with "absolute certainty the exact amount of chromium each defendant introduced into the groundwater," so long as there is "sufficient evidence from which a *reasonable and rational approximation* of each defendant's individual contribution to the contamination can be made." *Id.* at 903 (emphasis added). "[E]vidence sufficient to permit a *rough approximation* is all that is required under the Restatement." *Id.* at 904 n.19 (emphasis added).

The Fifth Circuit also articulated an understanding of the policies underlying CERCLA apportionment that is directly contrary to the Ninth Circuit's view in this case. The Fifth Circuit explained in *Bell* that Congress recognized that CERCLA "can be terribly unfair in certain instances in which parties may be required to pay huge amounts for damages to which their acts did not contribute," and "left it to the courts to fashion some rules that will, in appropriate instances, ameliorate this harshness." *Id.* at 897. The

Fifth Circuit expressly rejected any suggestion that the insolvency of a defendant could be relevant to the apportionment analysis, "especially when the plaintiff is the government," because "the deck of legal cards is heavily stacked in favor of the government" already. *Id.* at 901 n.13.

If this case had arisen in the Fifth Circuit, the district court's careful apportionment analysis would have been affirmed. The Fifth Circuit in *Bell* specifically rejected the suggestion, central to the Ninth Circuit's analysis here, that apportionment requires contemporaneous written records showing the defendants' respective activities with great specificity. It also held that "testimony and other evidence establish[ing] a factual basis for making a reasonable estimate," *id.* at 903, "reasonable and rational approximation," or "rough approximation," is enough. The Fifth Circuit specifically endorsed reliance on reasonable assumptions, and the assumptions it approved were, if anything, less well supported than those the district court employed here.[6] And it rejected any proof requirements that "would be the equivalent of a mandate of joint and several liability in all CERCLA cases," *id.* at 904 n.19, like the requirements adopted by the Ninth Circuit here.

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[6] As explained by the dissent in *Bell Petroleum*, the Fifth Circuit held that the evidence permitted a reasonable apportionment, even though (1) a PRP's expert assumed that the electrical usage for its plating operations was 30% of its electrical usage, but 50% of the electrical usages for two other PRPs, (2) only "scattered invoices" were available to demonstrate sales records, (3) expense records were available only for one 3-month period out of the 6-year period during which defendants operated, and (4) a PRP's expert assumed that there was no waste disposal after a catch tank was installed at the site. 3 F.3d at 911.

The Ninth Circuit's decision also rejects both geographic and temporal divisibility even though other courts have endorsed both approaches. *Compare, e.g., United States v. Township of Brighton*, 153 F.3d 307, 320 (6th Cir. 1998) ("[T]ime seems the most obvious and probable way that an operator can show divisibility."); *United States v. Hercules, Inc.*, 247 F.3d 706, 719 (8th Cir. 2001) ("A defendant need not prove that its 'waste did not, or could not, contribute' to any of the harm at a CERCLA site ... because it is also possible to prove divisibility of single harms based on volumetric, chronological, or other types of evidence.")

The Eighth Circuit has also embraced a view of the general policies underlying apportionment that is consistent with the Fifth Circuit's opinion in *Bell*, and inconsistent with the Ninth Circuit's decision in this case. The Eighth Circuit held in *Hercules* that apportionment is "both compatible with the text and the overall statutory scheme of CERCLA and a sensible way to avoid imposing on parties excessive liability for harm that is not fairly attributable to them." 247 F.3d at 716–17. Like the Fifth Circuit, it also "reject[ed] any suggestion that the financial condition of the parties should play a role in a CERCLA divisibility analysis." *Id.* at 718 n.10.

The Ninth Circuit's decision is also clearly inconsistent with decisions of other circuits apportioning harms under common law principles in other contexts. In *Sauer v. Burlington Northern Railroad Co.*, 106 F.3d 1490, 1494 (10th Cir. 1996), for example, the Tenth Circuit permitted apportionment under the Federal Employers' Liability Act between a pre-existing injury and aggravation of that injury resulting from negligence, and held that "[t]he extent

to which an injury is attributable to a preexisting condition or prior accident need not be proved with mathematical precision or great exactitude." And the Fourth Circuit held that apportionment was appropriate in a suit for mismanagement of loans against former officers of a federally insured bank, so long as "'a factual basis can be found for some *rough practical apportionment.*'" *Fed. Sav. & Loan Ins. Corp. v. Reeves*, 816 F.2d 130, 136 (4th Cir. 1987) (emphasis added) (citing Restatement §433A cmt. d).

C. The Circuits are Further Divided on The Appellate Standard of Review

The Ninth Circuit's decision also deepens an acknowledged circuit split over the standard of appellate review in CERCLA apportionment cases.

The Fifth and Eighth circuits first review *de novo* whether there is a reasonable basis for apportioning harm, and then examine the district court's allocation as a question of fact, reviewed under the clearly erroneous standard. *See Hercules*, 247 F.3d at 718–19; *Bell Petroleum*, 3 F.3d at 896, 902. The Sixth Circuit reviews for clear error the district court's finding of a "'reasonable basis for determining the contribution of each cause to a single harm.'" *Township of Brighton*, 153 F.3d at 318 (citation omitted).

The Ninth Circuit purported to adopt the Fifth and Eighth Circuit standard, with "a refinement suggested by Judge Parker's dissent in *Bell Petroleum*." Pet.App.-35a. But as the dissent from denial of rehearing *en banc* explained, in practice the Ninth Circuit's standard of review appears to involve "sleight of hand." Pet.App.-65a. The Ninth Circuit held that as a legal matter the harm in this case was capable of

apportionment, and it largely agreed with the district court's fact-finding. *See* Pet.App.-38a ("[W]e do not fault the district court's factfinding—its numbers are mostly correct ...."). With only one exception (and that one an error, *supra* n.3) the Ninth Circuit did not hold that any of the district court's careful findings were clearly erroneous. Instead it essentially held that the district court erred as a matter of law by apportioning liability based on "the simplest of considerations," without refuting (or, for the most part, even acknowledging) the district court's findings that made those "simple" considerations a reasonable basis for apportionment on the facts presented here. *Id.*

Petitioners submit that the Sixth Circuit's deferential standard of review is more appropriate, because whether a factual basis exists for a rough practical approximation is an extremely fact-intensive question. The Sixth Circuit's standard is also consistent with the Third Restatement's view that "[w]hether damages are divisible is a question of fact" and "[t]he magnitude of each divisible part is also a question of fact." Restatement (Third) of Torts: Appropriation of Liability §26 cmt. h (2000); *see also United States v. Alcan Aluminum Corp.*, 990 F.2d 711, 722 (2d Cir. 1993) ("As other courts have noted, apportionment itself is an intensely factual determination."). As the dissenters from denial of rehearing *en banc* correctly recognized, a reviewing court giving appropriate deference to the district court's factual findings in this case would have affirmed its apportionment decision.

II. THIS CASE PRESENTS ISSUES OF NATIONAL IMPORTANCE THAT REQUIRE GUIDANCE FROM THIS COURT

Although Congress deliberately left all questions involving the division or apportionment of response costs under CERCLA to common law development, this Court has never provided guidance to the lower courts on these crucial issues. The need for national uniformity in the rules governing the apportionment of CERCLA liability has been recognized by every court to address the issue, including the Ninth Circuit. *See, e.g., Chem-Dyne Corp.*, 572 F. Supp. at 802, 809 ("The improper disposal or release of hazardous substances is an enormous and complex problem of national magnitude .... Federal programs that by their nature are and must be uniform in character throughout the nation necessitate the formulation of federal rules of decision."); Pet.App.-22a–23a. And the Ninth Circuit's decision is clearly irreconcilable with (at least) the standards prevailing in the Fifth Circuit.

The appropriate standards for apportionment of liability under CERCLA is also a question of great national importance due to the large number of Superfund sites and the extraordinary expenses of remediation. According to the United States General Accounting Office ("GAO"), "[t]he effort to clean up federal hazardous waste sites is likely to be among the costliest public works projects ever attempted by the government."[7] In 1997, the GAO estimated that

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[7] GAO, *Federal Facilities: Agencies Slow to Define the Scope and Cost of Hazardous Waste Site Cleanups, Report to the Subcomm. on Investigations and Oversight, Comm. on Public*

cleaning up Superfund sites "could amount to over $300 billion in federal costs and many billions more in private expenditures."[8] Some "peg ultimate cleanup costs as high as $1 trillion."[9] "One commentator has described the resolution of insurance coverage for clean-up costs under CERCLA as 'a trillion-dollar question.'"[10] Jill E. Fisch, *Captive Courts: The Destruction of Judicial Decisions by Agreement of the Parties*, 2 N.Y.U. Envtl. L.J. 191, 206 (1993) (citing Roger Parloff, *Rigging The Common Law*, Am. Lawyer 74, 76 (Mar. 1992)).

There are currently 1,255 final sites on the EPA's National Priorities List ("NPL").[11] *See* 42 U.S.C. §9605(a)(8)(B). The Ninth Circuit contains 205.[12] EPA may also bring CERCLA claims against PRPs for the remediation of sites not on the list. The EPA's database lists over 10,000 active non-NPL sites, 1,737

Works and Transp. 7 (Apr. 1994), *available at* http://archive.gao.gov/t2pbat3/151689.pdf.

[8] GAO, *Superfund Program Management*, at 6 (Feb. 1997), *available at* http://www.gao.gov/archive/1997/hr97014.pdf.

[9] GAO, *Consolidating and Restructuring the Executive Branch: Hearing Before the Subcomm. on Gov't Mgmt., Info., & Tech. of the* Comm. *on Gov't Reform and Oversight, 104th Cong.* 55 (1995) (statement of Jerry Taylor, Director of Nat'l Res. Studies, Cato Institute).

[10] The A.M. Best Company and the American Society of Actuaries insurance reported that "total estimated Superfund and environmental cleanup costs (including transaction fees) estimate liabilities at over $1 trillion." Donald Sutherland, *Superfund Awakes in State Supreme Courts*, RiskWorld, (Dec. 5, 1997), *available at* http://www.riskworld.com/news/97q4/nw7aa055.htm.

[11] EPA, NPL Site Totals by Status and Milestone, http://www.epa.gov/superfund/sites/query/queryhtm/npltotal.htm.

[12] EPA, Superfund Site Information, http://cfpub.epa.gov/supercpad/cursites/srchsites.cfm.

of which are located in the Ninth Circuit.[13] The Ninth Circuit's erroneous and unfair apportionment standard has the potential to impose unwarranted joint and several liability on thousands of PRPs who are actually responsible for only a limited amount of contamination.

CERCLA clean-up costs *on average* exceed $30 million for a site on the NPL, and can be far higher. *N. States Power Co. v. Fidelity & Cas. Co. of N.Y.*, 523 N.W.2d 657, 660 (Minn. 1994). In one case, the Third Circuit noted that remediation of chemical leakage at a rail yard site would likely exceed $53 million. *United States v. Se. Pa. Transp. Auth.*, 235 F. 3d 817, 824 (3d Cir. 2000). Remediation at the Helen Kramer Landfill Superfund Site in New Jersey cost $123 million. *United States v. Kramer*, 19 F. Supp. 2d 273, 276, 287 (D.N.J. 1998). Ohio's Fields Brook Site could cost $100 million. *United States v. Gencorp, Inc.*, 93 F. Supp. 928, 930 n.5 (N.D. Ohio 1996). Although CERCLA cases are often settled through negotiated consent decrees, 42 U.S.C. §9622, the ability to impose joint and several liability on minor parties will affect the value of those settlements and will likely force many PRPs to accept inequitable settlements.

Despite the importance of this issue, this Court has never addressed the standard for CERCLA apportionment in any context. Although this Court has resolved questions regarding *contribution* under 42 U.S.C. §9613(f), *see Atl. Research*, 127 S. Ct. at 2333; *Cooper Indus., Inc. v. Aviall Servs., Inc.*, 543 U.S. 157, 161 (2004), contribution is entirely distinct from apportionment. Contribution allows CERCLA

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[13] EPA, Superfund Site Information, http://cfpub.epa.gov/supercpad/cursites/srchsites.cfm.

defendants to be reimbursed by other *solvent* PRPs based on each party's equitable share of the total damages, and it occurs after joint and several liability has been imposed. Contribution "is not a complete panacea since it frequently will be difficult for defendants to locate a sufficient number of additional, solvent parties." *O'Neil v. Picillo*, 883 F.2d 176, 179 (1st Cir. 1989). "Orphan shares" of responsibility attributable to absent or insolvent parties are a common occurrence at CERCLA sites.[14] Moreover, contribution is unavailable against defendants who have resolved their liability against the United States or another state. 42 U.S.C. §9613(f).

This Court should grant review to establish sensible and uniform rules for the apportionment of the (conservatively) hundreds of billions of dollars of cleanup liability imposed by CERCLA.

CONCLUSION

This Court should grant this petition as well as the separate petition for certiorari filed by Shell, and consolidate both petitions for argument.

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[14] In a 1993 EPA study of 78 sites, 52 sites (67 percent) had an orphan share, and the average size of the orphan share was 26.9 percent. Ridgeway M. Hall, Jr. et al., *Superfund Response Cost Allocations: The Law, the Science and the Practice*, 49 Bus. Law. 1489, 1503 n.74 (1994). The EPA has itself said that "[a]t almost every Superfund site, some parties responsible for contamination cannot be found, have gone out of business, or are no longer financially able to continue cleanup efforts." EPA, Superfund Enforcement: Success in Enhancing Fairness and Expediting Settlements, *available at* http://www.epa.gov/superfund/accomp/17yrrept/report3.htm.

Respectfully submitted,

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APPENDIX

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(2)

Supreme Court, U.S.
FILED

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No.

In the Supreme Court of the United States

THE BURLINGTON NORTHERN AND SANTA FE RAILWAY COMPANY, AND UNION PACIFIC RAILROAD COMPANY,

PETITIONERS,

V.

UNITED STATES OF AMERICA

AND

DEPARTMENT OF TOXIC SUBSTANCES CONTROL, STATE OF CALIFORNIA,

RESPONDENTS.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

APPENDIX TO PETITION FOR A WRIT OF CERTIORARI

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UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

UNITED STATES of America, Plaintiff

and

Department of Toxic Substances Control, State of California, Plaintiff-Appellant,

v.

BURLINGTON NORTHERN & SANTA FE RAILWAY COMPANY, as successor in interest to the Atchison, Topeka & Santa Fe Railway Company; Union Pacific Transportation Company, as successor in interest to the Southern Pacific Transportation Company; Shell Oil Company, Defendants-Appellees.

United States of America, Plaintiff-Appellant,

and

Department of Toxic Substances Control, State of California, Plaintiff,

v.

Burlington Northern & Santa Fe Railway Company, as successor in interest to the Atchison, Topeka & Santa Fe Railway Company; Union Pacific Transportation Company, as successor in interest to the Southern Pacific Transportation Company; Shell Oil Company, Defendants-Appellees.

United States of America; Department of Toxic Substances Control, State of California, Plaintiffs-Appellees,

v.

Burlington Northern & Santa Fe Railway Company, as successor in interest to the Atchison, Topeka & Santa Fe Railway Company; Union Pacific Transportation Company, as successor in interest to the Southern Pacific Transportation Company, Defendants,

and

Shell Oil Company, Defendant-Appellant.

Nos. 03-17125, 03-17153, 03-17169.

Argued and Submitted Sept. 12, 2005.
Submission Withdrawn Sept. 14, 2005.
Resubmitted March 16, 2007.
Filed March 16, 2007.
Amended Sept. 4, 2007.
Second Amendment March 25, 2008.

520 F.3d 918; 2008 WL 763257

Before: R. FLETCHER, JOHN R. GIBSON,* and MARSHA S. BERZON, Circuit Judges.

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* The Honorable John R. Gibson, Senior United States Circuit Judge for the Eighth Circuit, sitting by designation.

ORDER

The full court has been advised of the petitions for rehearing en banc. A judge of the court requested a vote on en banc rehearing. The majority of the active judges have voted to deny rehearing the matter en banc. Fed. R.App. P. 35(f).

The panel has voted to amend its opinion and to deny appellees' petitions for rehearing with the following amendments.

The opinion filed March 16, 2007 and amended September 4, 2007, published at 502 F.3d 781 (9th Cir.2007), is hereby further amended as follows:

1. On page 790, add a new footnote 5 after <When the trucks carrying D-D ... large tanks by hoses.> reading:

> Shell was deeply involved in the delivery process: The district court found that Shell determined and arranged for the means and methods of delivery of D-D to the Arvin plant and detailed loading and unloading procedures. It also found that the trucking companies with which Shell contracted for delivery did the transfers for most of the relevant period. It was only in the early 1980s that Shell dictated that B & B personnel should instead do the unloading.

2. Renumber footnote 7 on page 792 as footnote 8 and replace its text with <0.9 acres 4.7 acres = 0.191 (19.1%).>.

3. In the last paragraph on page 792, replace <In accord with this purpose, CERCLA is a "super-strict" liability statute.> with <In accord with this purpose, CERCLA creates a system of strict liability.>.

4. In the first paragraph on page 793, replace <make out> with <establish>.

5. In the first full paragraph on page 794, replace <other indications of federal common law> with <other sources of federal common law>.

6. Replace <the "super-strict" nature of> with <the reach of> in the second-to-last sentence of footnote 16 on page 795.

7. Replace the paragraph beginning on page 795 and continuing to page 796 with:

> The question, then, is what the uniform federal law should be. Once again, all the circuits that have addressed this question have followed *Chem-Dyne*, holding that the appropriate starting point for a common law rule of apportionment applicable to CERCLA cases is Section 433A of the Restatement of Torts. *See Hercules*, 247 F.3d at 716 & n. 9, 717 (noting that courts support the divisibility doctrine as borrowed from the Restatement); *Bell Petroleum*, 3 F.3d at 895 (relying on the Restatement); *Chem Dyne*, 572 F.Supp. at 810 (establishing this method). We agree that harm may be apportioned when "there exists a reasonable basis for divisibility" of a single harm or when several "distinct harms" are present. *Hercules*, 247 F.3d at 717.[18]

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[18] We of course agree with our sister circuits that, if adequate information is available, divisibility may be established by "volumetric, chronological, or other types of evidence," *Hercules*, 247 F.3d at 719 (citing *Bell Petroleum*, 3 F.3d at 895-96), including appropriate geographic considerations, *see United States v. Township of Brighton* ("*Brighton II*"), 282 F.3d at 919-20 (6th Cir.2002), *Bell Petroleum* 3 F.3d at 903-04. We hold only that, in this case, Shell and the Railroads failed to show that "expert testimony and other evidence establishes a factual basis for making a reasonable estimate that will fairly apportion liability." *Bell Petroleum*, 3 F.3d at 903. "[A]pproaches to divisibility will

Because CERCLA's statutory liability scheme differs from the common law in important respects, however, our sister circuits have recognized that its principles must be somewhat modified to fit the CERCLA context. *See, e.g., Bell Petroleum*, 3 F.3d at 902 ("Restatement principles must be adapted, where necessary, to implement congressional intent with respect to liability under the unique statutory scheme of CERCLA."); *Hercules*, 247 F.3d at 717 (The Restatement is "the starting point ....[but] only to the extent that it is compatible with the provisions of CERCLA."). We concur in this general conclusion and acknowledge, in particular, that there are two areas where the Restatement approach is a somewhat poor fit and requires slight modifications to ensure that its approach comports with the liability and remediation scheme of CERCLA. *First*, as we describe *infra*, there are important distinctions between causation as conceived in the Restatement and causation in the context of CERCLA. Unlike the Restatement's common law causation, CERCLA affixes liability based upon its PRP provisions, which define classes of liable parties based upon a party's statutorily-defined nexus to the contaminated site. And *second*, the concept of "harm" in the Restatement as actual injury does not correspond easily to CERCLA's priorities. Contamination and the cost of remediation are both relevant for the "harm" analysis under CERCLA. Finally, we recognize that the

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vary tremendously depending on the facts and circumstances of each case," *Hercules*, 247 F.3d at 717, and approaches that were inappropriate or inadequately supported in this case may be available in other circumstances.

> Restatement's emphasis on objective considerations to determine whether apportionment is justified in a given case comports with CERCLA's strict liability scheme. Equitable considerations may play a role in a later contribution action amongst liable parties, but not in an action such as this where the only relevant issue is whether there is a reasonable basis, founded in record evidence, to apportion damages amongst defendants.

8. In the first full paragraph on page 796, replace <§ 433A(1)(b) and thereby incorporated a modified concept of causation.> with <§ 433A(1)(b).>.

9. Add <traditional> before <causation concepts are useful> in the paragraph beginning on page 796 and continuing to page 797.

10. In the second full paragraph on page 797, replace <We therefore adjust .... time of the disposal> with:

> The statute thus departs from Restatement principles by abjuring the traditional "causation" principles in favor of a nexus concept defined by its PRP provisions. Where, as here, the pertinent PRP status is as landowner, the landowner can establish divisibility by demonstrating a reasonable basis for concluding that a certain proportion of the contamination did not originate on the portion of the facility that the landowner owned at the time of the disposal.

11. Add the following text after the last full paragraph on page 798:

> In so holding, we begin from the fundamental difference between apportionment and contribution. Apportionment, which is the relevant question in this case, looks to whether

defendants may avoid joint and several liability by establishing a fixed amount of damage for which they are liable. Section 433A of the Restatement speaks to this issue. Contribution is a distinct concept. If there is insufficient evidence to support apportionment, jointly and severally liable PRPs may still seek to recover from each other in a later contribution action. *See, e.g.* RESTATEMENT (THIRD) OF TORTS § 23(a) (2000) ("When two or more persons are or may be liable for the same harm and one of them discharges the liability of another by settlement or discharge of judgment, the person discharging the liability is entitled to recover contribution from the other, unless the other previously had a valid settlement and release from the plaintiff."). As we explain below, CERCLA permits equitable considerations to be taken into account in a contribution action amongst PRPs, but CERCLA's strict liability scheme does *not* permit equitable considerations to have any bearing in an action to determine whether defendants have presented sufficient evidence to apportion liability.

12. Beginning on page 798 and continuing to page 799, replace <Although CERCLA is not explicit on this issue.... whittle their liability to zero:> with:

Section 9613(f), added to CERCLA in 1986, provides for contribution actions among PRPs once liability to the plaintiffs has been determined. That provision describes, quite generally, the considerations applicable in a contribution action for determining whether one PRP can collect from another a portion of the costs for which it has been held liable: "In resolving contribution claims, the court may

allocate response costs among liable parties using such *equitable factors* as the court determines are appropriate." § 9613(f) (emphasis added).[26] In contrast, CERCLA contains no provision explicitly providing for initial apportionment of liability. And § 433A(1)(b) of the Restatement and the appended commentary concerning divisibility are silent as to equitable considerations.[27]

As noted, this circuit heretofore has not addressed divisibility analysis. But the implication from our cases deciding § 9613(f) contribution issues is that the proper time to focus on such factors is *at the contribution phase*, not the liability phase. *See, e.g., Carson Harbor Vill.*, 270 F.3d at 871 (noting that the "contribution provision aims to avoid a variety of scenarios by which a comparatively innocent PRP might be on

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[26] Among the equitable factors used in CERCLA contribution cases are the so-called "Gore factors." *See Hercules*, 247 F.3d at 718. Those factors are derived from the amendment that then-Representative Gore introduced in 1980 to alleviate the harshness of mandatory apportionment, which at that time was a part of the bill. *See* 126 CONG. REC. 26782 (1980) (statement of Rep. Gore). Although these factors are appropriate in contribution cases, they are not, for the reasons discussed in the text, appropriate considerations at the liability stage.

[27] The only mention of equity in Restatement § 433A is in comment h, regarding "[e]xceptional cases." Comment h suggests that in cases of insolvent defendants, when an "innocent plaintiff would be forced to bear the share of the loss due to the defendant from whom he could not collect damages," courts may refuse to allocate harm to avoid "injustice to the plaintiff." Because we determine that there is no reasonable basis for apportioning the defendants' harm, we do not reach the question of whether the considerations of comment h are applicable here.

the hook for the entirety of a large cleanup bill"); *Pinal Creek*, 118 F.3d at 1301 ("A PRP's contribution liability will correspond to that party's equitable share of the total liability and will not be joint and several.").

Other circuits have been careful to delineate the difference between the equitable considerations pertinent to contribution under § 9613(f) and the objective considerations pertinent to divisibility under § 9607(a). *See Hercules*, 247 F.3d at 718; *Township of Brighton*, 153 F.3d at 318; *Bell Petroleum*, 3 F.3d at 901. As the Sixth Circuit has noted, divisibility analysis, unless carefully limited, has the potential to eviscerate the strict liability principles of CERCLA entirely, "because defendants who can show that the harm is divisible, and that they are not responsible for any of the harm" could whittle their liability to zero.

13. In the paragraph beginning on page 799 and continuing to page 800, replace <While it may seem unfair ... liability scheme.> with <While it may seem unfair to hold a partial owner liable for all of the contamination cleanup costs, that perceived unfairness is the result of CERCLA's expansive statutory liability scheme.>.

14. In the second full paragraph on page 801, strike <, and the original ... from the Railroads>.

15. In the second full paragraph on page 801, replace <perfect information> with <adequate information>.

16. In the paragraph beginning on page 801 and continuing to page 802, replace <are in no respect traceable to> with <did not originate on>.

17. Renumber footnote 27 on page 802 as footnote 29 and replace <We do not go as far .... present in this case.> with <We do not agree with Judge Moore in this regard.>.

18. Add a new footnote 30 on page 803 following <the single Arvin facility> reading:

> In its discussion of the Railroads' apportioned liability, the district court found that B & B used the Railroad parcel as part of its total agricultural-chemical operations, and it earlier cited approvingly to documents describing the land as "an integral part of the adjacent farm chemical distribution facility." The dissent from denial of rehearing en banc therefore wrongly characterizes our description of the site as "appellate fact-finding." *See* Dissent at 2914-16 [520 F.3d 958-960].

19. In the first full paragraph on page 804, replace <excluded in its calculations> with <excluded from its calculations>.

20. Renumber footnote 32 on page 811 as footnote 35, strike following <include the $1.3 million>, and add <Because we therefore do not hold Shell liable for this Dow product, the dissent from denial of rehearing en banc is wrong when it claims we err by holding Shell liable for "contamination from products Shell did not sell to B & B." Dissent at 2921-22 n.22 [520 F.3d 962-963].> after < calculation of Shell's liability.>

21. Renumber all footnotes in sequential order.

* * * * *

No further petitions for rehearing or rehearing en banc will be entertained. The mandate shall issue in due course.

OPINION

BERZON, Circuit Judge:

A now-defunct company, Brown & Bryant, Inc. (B & B), owned and operated a facility at which toxic chemicals were stored and distributed. Part of the land on which the chemical operation was located was owned by two railroad companies (the Railroads), and some of the chemicals used by B & B were supplied and delivered to the facility by Shell Oil Company (Shell). Because toxic chemicals remaining at the facility threatened groundwater and may continue to do so in the future, the United States Environmental Protection Agency (EPA) and the State of California's Department of Toxic Substances Control (DTSC) spent a considerable amount of money to clean up the site and may need to spend more in the future. The two agencies sought to recover these response costs under the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 96019675,[1] (CERCLA), but the district court held the Railroads and Shell liable for only a minor portion of the total cleanup costs. B & B was defunct by that time, and so could not contribute to the cleanup costs. The agencies were thus left holding the bag for a great deal of money.

Seeking to hold the Railroads and Shell jointly and severally liable for the entire judgment, the agencies appeal. Shell cross-appeals, claiming that it was not an "arranger" under CERCLA, § 9607(a)(3), and therefore is not a party on whom

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[1] Unless otherwise noted, all statutory citations are to Title 42 and the 2000 edition of the U.S. Code.

any cleanup liability can be imposed. We reverse the portion of the judgment that declined to impose full joint and several liability on the Railroads and Shell and affirm the portion of the judgment that imposed liability on Shell as an arranger.[2]

I. Background

Beginning in 1960, B & B operated an agricultural chemical storage and distribution facility in Arvin, California on a 3.8-acre parcel of land (the B & B parcel). In 1975, B & B's agricultural chemical distribution business outgrew that parcel, and B & B began leasing a 0.9-acre parcel of land adjacent to its own parcel. The 0.9-acre parcel (the Railroad parcel) was jointly owned by the Railroads—Atchison, Topeka & Santa Fe Railroad Co., the predecessor in interest to Burlington Northern & Santa Fe Railway Co., and Southern Pacific Transportation Co., the predecessor in interest to Union Pacific Transportation Co. B & B used the Railroad parcel principally to park fertilizer rigs.

The Railroad parcel comprised the western portion of the Arvin site.[3] Directly to the east of the Railroad parcel sat B & B's warehouse. The Railroad parcel, like the rest of the Arvin site, was graded toward a drainage pond on the B & B parcel.

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[2] The Railroads have requested judicial notice of the EPA proceedings concerning their suit for reimbursement from the government and of the stay of those proceedings pending the determination of joint and several liability in this case. These proceedings do not "have a direct relation to matters at issue." *United States ex rel. Robinson Rancheria Citizens Council v. Borneo, Inc.*, 971 F.2d 244, 248 (9th Cir.1992) (citation omitted). We therefore deny the Railroads' request for judicial notice.

[3] We refer to the B & B and Railroad parcels together as the "Arvin site."

B & B used the Railroad parcel as an integral part of its overall agricultural chemical facility. From its facility B & B sold local growers agricultural chemical products produced by various manufacturers. In particular, B & B purchased, received delivery of, stored on the Arvin site, and distributed two Shell-produced agricultural chemicals: the soil fumigants D-D and Nemagon. D-D and Nemagon—members of a class of chemicals called nematocides—are designed to kill nematodes, microscopic worms that attack the roots of crops. Nematocides work by penetrating the soil and then dispersing. B & B also stored on the Arvin site dinitro (dinoseb) weed killer, purchased from Dow Chemical Company.

During the 1960s and 1970s, Shell strongly encouraged its customers, including B & B, to purchase D-D in bulk, a policy requiring customers to maintain large storage tanks. Shell delivered the bulk D-D to B & B "FOB Destination" via common carrier trucks.[4] When the trucks carrying D-D arrived at the Arvin facility, the contents of the trucks were transferred to B & B's large tanks by hoses.[5] The process was quite messy, with frequent spills.

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[4] "FOB Destination" means "free on board" and "when the term is F.O.B. the place of destination, the seller must at his own expense and risk transport the goods to that place and there tender delivery of them." U.C.C. § 2-319(1)(b) (2003).

[5] Shell was deeply involved in the delivery process: The district court found that Shell determined and arranged for the means and methods of delivery of D-D to the Arvin plant and detailed loading and unloading procedures. It also found that the trucking companies with which Shell contracted for delivery did the transfers for most of the relevant period. It was only in the early 1980s that Shell dictated that B & B personnel should instead do the unloading.

To apply D-D to growers' fields, B & B used rigs loaded with the chemical. The rigs were stored on the Railroad parcel, as were bulk containers of dinoseb and, occasionally, empty fertilizer cans. Chemicals also reached the Railroad parcel through water flow from the B & B parcel.

In 1978, after a windstorm destroyed the bulk D-D storage tank used to store Shell D-D, B & B began using converted stainless steel milk trailers to store the bulk D-D. The chemical, which is highly corrosive and eats through steel, can cause leakage in steel tanks only a few years old. B & B kept these leak-prone tanks all over the Arvin facility, including on the Railroad parcel.

D-D, when it leaks, evaporates quickly if exposed to air but is highly soluble in water. When D-D infiltrates the ground, it moves through the soil by molecular diffusion, dispersing in all directions. A slight pull from gravity, however, makes the chemical a bit more likely to flow downward into groundwater than laterally through the soil. Dinoseb, similarly, tends to move to the groundwater table if there is water movement in that direction. No toxic chemicals can reach the groundwater level currently used as a source of drinking water because of an impermeable layer of soil. The next highest level, however, is a potential source of drinking water, and contamination can reach that level.

After more than twenty years of leakage and dissemination of hazardous materials, the DTSC in 1983 found B & B in violation of several hazardous waste laws. The EPA investigated separately and found evidence of substantial soil and groundwater contamination at B & B's Arvin facility. The EPA and DTSC (the Governments) began to remedy the contamination pursuant to their cleanup authority under CERCLA, incurring substantial remediation

costs. In 1991, the EPA ordered the Railroads to take specific preventative steps on the Railroad parcel, including installing groundwater monitoring wells. None of the contamination requiring immediate remediation was on the Railroad parcel.

In 1992, the Railroads filed an action against B & B and certain of its principals for contribution for costs incurred in the EPA-ordered cleanup. Four years later, the Governments each filed CERCLA actions against B & B, the Railroads, and Shell for reimbursement of their investigation and cleanup costs.[6] The district court consolidated the three cases and, after a twenty-seven day bench trial, issued an exceedingly detailed 185-page Findings of Fact and Conclusions of Law, thereafter slightly amended.[7]

The district court found the Railroads liable as owners of the Arvin facility and as persons who "at the time of disposal of any hazardous substance owned or operated any facility at which such hazardous substances were disposed of." § 9607(a)(1), (2). Shell was held liable as a "person who ... arranged for disposal ... of hazardous substances." § 9607(a)(3). Turning to whether the Railroads and Shell were liable for all or only a portion of the cleanup costs, the district court found that the harm to the Arvin site was capable of apportionment and proceeded to apportion it. The Railroads and Shell had, by acknowledging no liability at all, taken what the district court termed a "'scorched earth,' all-or-nothing approach to liability," and so

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[6] The relevant statutory sections covering contribution and reimbursement actions, § 9613(f) and § 9607, are quoted later in this opinion.

[7] Quotations from and discussion of the district court's ruling in this opinion concern the district court's Amended Findings of Fact and Conclusions of Law unless otherwise noted.

provided little assistance on the apportionment issue. The district court nonetheless proceeded to "perform the equitable apportionment analysis demanded by the circumstances of the case."

For the Railroads, the court multiplied three proportions: (1) the percentage of the overall site that was owned by the Railroads, 19.1%;[8] (2) the percentage of time that the Railroads leased the parcel in relation to B & B's total operations, 45%;[9] and (3) the fraction of hazardous products attributable to the Railroad parcel, 66%.[10] This calculation resulted in a determination of 6% liability. Then, to account for any "calculation errors," the district court assumed 50% error and raised the Railroads' proportion of the total liability to 9%.

For Shell, the district court approximated the percentages of leakage from various activities attributable to Shell and multiplied them together to set Shell's proportion of the total liability at 6%.[11] Shell was also assigned, in the contribution action, 6%

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[8] 0.9 acres / 4.7 acres = 0.191 (19.1%).

[9] B & B began operations in 1960. The Railroad parcel was leased starting in 1975. In 1988, B & B ceased its operations at Arvin. Thus, the Railroad parcel was part of the Arvin site for 13 of 29 years, or 45% of the time B & B operated the facility.

[10] There were three pertinent chemicals: D-D, Nemagon, and dinoseb. The district court found that although there was some D-D contamination attributable to the Railroad parcel, that "slight contamination is offset by the fact that the [Arvin] Site is graded towards the southeast pond [on the B & B parcel] and the levels of chemical contamination on the B & B parcel are substantially higher than the reported detections on the Railroad parcel." On that reasoning, the district court removed all D-D from the equation.

[11] B & B, albeit insolvent, was assigned 100% joint and several liability.

of the costs incurred by the Railroads in their cleanup effort.[12]

DTSC and the EPA timely appealed the district court's judgment. Shell timely cross-appealed the finding that it was liable as an "arranger" under CERCLA.

II. Standards of Liability Under Cercla

CERCLA was enacted in 1980 to provide for effective responses to health and environmental threats posed by hazardous waste sites. *See generally Mardan Corp. v. C.G.C. Music, Ltd.*, 804 F.2d 1454, 1455 (9th Cir.1986). Under CERCLA, state and federal governments can first begin the cleanup of toxic areas, *see* § 9604(a)-(d), and then sue potentially responsible parties (PRPs) for reimbursement, *see* § 9607(a). A key purpose of this scheme is "shift[ing] the cost of cleaning up environmental harm from the taxpayers to the parties who benefited from the disposal of the wastes that caused the harm." *EPA v. Sequa Corp. (In the Matter of Bell Petroleum Servs., Inc.)*, 3 F.3d 889, 897 (5th Cir.1993) (citing *United States v. Chem-Dyne Corp.*, 572 F.Supp. 802, 805-06 (S.D.Ohio 1983)).

In accord with this purpose, CERCLA creates a system of strict liability. Under its provisions, parties can be liable for cleaning up toxic chemicals if they fit into one or more of the four PRP categories set out in § 9607(a):

> (1) the owner and operator of ... a facility,
>
> (2) any person who at the time of disposal of any hazardous substance owned or operated any

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[12] The Railroads do not challenge the percentage of liability assigned to Shell.

> facility at which such hazardous substances were disposed of,
>
> (3) any person who by contract, agreement, or otherwise arranged for disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous substances owned or possessed by such person ..., and
>
> (4) any person who accepts or accepted any hazardous substances for transport to disposal or treatment facilities....

A "facility" is defined in § 9601(9)(B) as "any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located; but does not include any consumer product in consumer use or any vessel."[13] The statute's basic liability provision, in turn, provides that "subject only to the defenses set forth in subsection (b) of this section [PRPs shall be liable for]—(A) all costs of removal or remedial action incurred by the United States Government or a State or an Indian tribe not inconsistent with the national contingency plan ...." § 9607(a). Thus, PRPs can be responsible for the costs of cleaning up hazardous waste sites without any finding that they were negligent *or* that they caused the contamination, unless they can establish the third-party defense set out in § 9607(b)(3).[14]

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[13] The district court found that the entire Arvin site, including the Railroad parcel, was a single facility for the purposes of § 9607. The Railroads do not appeal that finding.

[14] Section 9607(b) reads:

> There shall be no liability under subsection (a) of this section for a person otherwise liable who can establish by a preponderance of the evidence that the release or threat of release of a hazardous substance and the damages resulting therefrom *were caused solely by*—

A. Validity of Apportionment

CERCLA does not address the question whether, as between PRPs who are liable for cleanup costs, liability is *joint and* several—meaning that each PRP responsible for all cleanup costs at a facility is liable for such costs—or *severable*—meaning that cleanup costs at a single facility can be apportioned among PRPs on some basis.

In this circuit, liability is joint and several when the harm is indivisible. *Fireman's Fund Ins. Co. v. City of Lodi*, 302 F.3d 928, 945 (9th Cir.2002); *see also Carson Harbor Vill., Ltd. v. Unocal Corp.*, 270 F.3d 863, 871 (9th Cir.2001) (en banc). Thus, a defendant "may be held fully liable for the entire clean-up costs at a site despite the fact that the defendant PRP was in fact responsible for only a fraction of the contamination." *Fireman's Fund*, 302 F.3d at 945.

We have also referred in general terms to the possibility of apportioning liability. *See id.* (noting the use of "federal common law principles" of

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...

(3) an act or omission of a third party other than an employee or agent of the defendant, or than one whose act or omission occurs in connection with a contractual relationship, existing directly or indirectly, with the defendant (except where the sole contractual arrangement arises from a published tariff and acceptance for carriage by a common carrier by rail), if the defendant establishes by a preponderance of the evidence that (a) he exercised due care with respect to the hazardous substance concerned, taking into consideration the characteristics of such hazardous substance, in light of all relevant facts and circumstances, and (b) he took precautions against foreseeable acts or omissions of any such third party and the consequences that could foreseeably result from such acts or omissions.

(Emphasis added). Section 9607(b) also provides defenses for "an act of God" and "an act of war." § 9607(b)(1), (2).

apportionment); *Carson Harbor Vill.*, 270 F.3d at 871 (stating that once liability has been found, "the defendant may avoid joint and several liability by establishing that it caused only a divisible portion of the harm"). Yet, in none of our cases has there been an actual dispute regarding whether liability should be apportioned among the liable PRPs.[15] This case squarely presents that question. To determine whether the district court was correct to apportion liability in this case, we thus must address, initially, the general propriety of severability.[16] In line with every

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[15] The major cases addressing division of PRP liability under CERCLA in the Ninth Circuit instead have been contribution cases among PRPs, decided after joint liability was established, *see, e.g., Carson Harbor Vill.*, 270 F.3d at 871; *Pinal Creek Group v. Newmont Mining Corp.*, 118 F.3d 1298, 1301 (9th Cir.1997), or have addressed a different issue entirely, *see, e.g., Fireman's Fund*, 302 F.3d at 945 (analyzing the possibility that CERCLA preempts state laws).

[16] DTSC argues that the apportionment question is not properly before us because it was not properly raised in the pretrial order, but we do not agree. To preserve a claim, a party must put forward a position in the pretrial statement in a manner sufficient to put the opposing party on notice and allow the trial court to consider its merits. *See Cripe v. City of San Jose*, 261 F.3d 877, 886 n. 9 (9th Cir.2001) (refusing to hold that defendants had waived an affirmative defense by mislabeling it, because the court and plaintiffs were on notice of the real issue); *Arizona v. Components Inc.*, 66 F.3d 213, 217 (9th Cir.1995) (noting that argument must be raised sufficiently for the court to rule on it). Notice to the district court is not an issue in this case, as the final decision addresses apportionment. While the Governments claim to have been unaware that they needed to address the apportionment issue, their assertion is not supported by the record. Both the Railroads and Shell directly addressed the apportionment issue in their pretrial orders. The Railroads "den[ied] that they are jointly and severally liable for the response costs claimed by the Government" but argued that, if liable, they

circuit that has addressed the issue, we hold that apportionment is available at the liability stage.

In so ruling we rely, as have the other circuits that have analyzed the issue, on a seminal case decided in 1983 in the Southern District of Ohio, *Chem-Dyne*. After reviewing the evolution of the statute, *Chem-Dyne* concluded that liability under § 9607(a) may be joint and several even though the statute does not expressly so provide. *Chem-Dyne*, 572 F.Supp. at 810. Suggesting that Congress intended to leave the matter to the usual common law rules, adjusted to CERCLA as necessary, *Chem-Dyne* held that courts should look to the Restatement (Second) of Torts, as well as to other sources of federal common law, for the principles of joint and several liability applicable under CERCLA. *See id.* at 809-10. Later, circuit court cases endorsed this approach. *See Chem-Nuclear Sys., Inc. v. Bush*, 292 F.3d 254, 259-60 (D.C.Cir.2002); *United States v. Hercules, Inc.*, 247 F.3d 706, 717 (8th Cir.2001); *United States v. Township of Brighton*, 153 F.3d 307, 318 (6th Cir.1998); *Bell Petroleum*, 3 F.3d at 895-96; *United States v. Alcan Aluminum Corp. (Alcan-PAS)*, 990 F.2d 711, 721-22 (2d Cir.1993); *United States v. Alcan Aluminum Corp. (Alcan-Butler)*, 964 F.2d 252, 268-69 (3d Cir.1992); *United States v. Monsanto Co.*, 858 F.2d 160, 171-72 (4th Cir.1988).

As *Chem-Dyne* persuasively recounts, the history of § 107(a) of CERCLA, 42 U.S.C. § 9607(a), indicates that although Congress declined to mandate joint and

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should only be responsible for that fraction of the total mass of groundwater contamination proven to be traceable to their parcel. Shell noted that joint and several liability is not mandatory and cited cases regarding apportionment. As a result, we conclude that the issue of apportioning liability was not waived and is properly before us.

several liability, it did not intend by doing so "a rejection of joint and severable liability." *Chem-Dyne*, 572 F.Supp. at 808. Instead, recognizing the difficulties inherent " 'in prescribing in statutory terms liability standards which will be applicable in individual cases,'" *id.* at 806 (quoting 126 CONG. REC. S14964 (Nov. 24, 1980) (remarks of Sen. Randolph)), Congress meant "to have the scope of liability determined under common law principles, where a court performing a case by case evaluation of the complex factual scenarios associated ... will assess the propriety of applying joint and several liability on an individual basis," *id.* at 808. We agree with this account of Congress's intent and hold that apportionment can be appropriate under CERCLA.

B. Standards for Apportionment

Because we hold that apportionment is available at the liability stage in CERCLA cases, we must determine the appropriate standards for determining when apportionment is available and, when it is, how to ascertain the proper division of damages among defendants. Again, we draw on the experience of our sister circuits.

The circuits that have addressed these questions have looked to common law principles of tort in general, and the Restatement in particular, for guidance as to when and how to impose joint and several liability under § 9607(a). We agree that this approach is proper and adopt it here. We also follow *Chem-Dyne* and all of the courts of appeals that have addressed the question in holding that the resulting standard must be a uniform federal rule. *See, e.g.*, *Aviall Servs., Inc. v. Cooper Indus., Inc.*, 312 F.3d 677, 684 (5th Cir.2002) (holding that apportionment of CERCLA liability "is ... a matter of federal common law"), *reversed on other grounds by* 543 U.S. 157, 125

S.Ct. 577, 160 L.Ed.2d 548 (2004); *United States v. Burlington N.R. Co.*, 200 F.3d 679, 697 (10th Cir.1999) (same); *Township of Brighton*, 153 F.3d at 329 (same); *Monsanto Co.*, 858 F.2d at 172 (same). As *Chem-Dyne* noted, the legislative history of CERCLA supports such an approach, as does its policy favoring national uniformity so as to discourage "illegal dumping in states with lax liability laws." *Chem-Dyne*, 572 F.Supp. at 809.[17]

The question, then, is what the uniform federal law should be. Once again, all the circuits that have addressed this question have followed *Chem-Dyne*, holding that the appropriate starting point for a common law rule of apportionment applicable to CERCLA cases is Section 433A of the Restatement of Torts. *See Hercules*, 247 F.3d at 716 & n. 9, 717 (noting that courts support the divisibility doctrine as

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[17] The parties here have assumed that the apportionment standard must be one of uniform federal common law. As stated above, every federal circuit to address the issue, including those decided after *O'Melveny & Myers v. FDIC*, 512 U.S. 79, 114 S.Ct. 2048, 129 L.Ed.2d 67 (1994), and *Atherton v. FDIC*, 519 U.S. 213, 117 S.Ct. 666, 136 L.Ed.2d 656 (1997), has shared that understanding. Although *Atchison, Topeka & Santa Fe Ry. Co. v. Brown & Bryant, Inc.*, 159 F.3d 358, 362-64 (9th Cir.1997), questioned whether *O'Melveny & Myers* and *Atherton* upset Ninth Circuit law with regard to the adoption of uniform federal common law regarding successor liability under CERCLA, very different considerations govern with respect to apportionment. In *Atchison*, resolution of the question of successor liability would resolve *who* was liable under CERLA, an inquiry with roots in state corporate law. Here, the inquiry diverges from state law completely. As we explain in this section, the reach of CERCLA liability is *sui generis*, so there is no state law directly applicable. The resulting apportionment analysis therefore requires a similarly unique set of considerations, married to the statute's functions and purpose.

borrowed from the Restatement); *Bell Petroleum*, 3 F.3d at 895 (relying on the Restatement); *Chem-Dyne*, 572 F.Supp. at 810 (establishing this method). We agree that harm may be apportioned when "there exists a reasonable basis for divisibility" of a single harm or when several "distinct harms" are present. *Hercules*, 247 F.3d at 717.[18]

Because CERCLA's statutory liability scheme differs from the common law in important respects, however, our sister circuits have recognized that its principles must be somewhat modified to fit the CERCLA context. *See, e.g., Bell Petroleum*, 3 F.3d at 902 ("Restatement principles must be adapted, where necessary, to implement congressional intent with respect to liability under the unique statutory scheme of CERCLA."); *Hercules*, 247 F.3d at 717 (The Restatement is "the starting point .... [but] only to the extent that it is compatible with the provisions of CERCLA."). We concur in this general conclusion and acknowledge, in particular, that there are two areas where the Restatement approach is a somewhat poor fit and requires slight modifications to ensure that its

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[18] We of course agree with our sister circuits that, if adequate information is available, divisibility may be established by "volumetric, chronological, or other types of evidence," *Hercules*, 247 F.3d at 719 (citing *Bell Petroleum*, 3 F.3d at 895-96), including appropriate geographic considerations, *see United States v. Township of Brighton* ("*Brighton II* "), 282 F.3d at 919-20 (6th Cir.2002), *Bell Petroleum* 3 F.3d at 903-04. We hold only that, in this case, Shell and the Railroads failed to show that "expert testimony and other evidence establishes a factual basis for making a reasonable estimate that will fairly apportion liability." *Bell Petroleum*, 3 F.3d at 903. "[A]pproaches to divisibility will vary tremendously depending on the facts and circumstances of each case," *Hercules*, 247 F.3d at 717, and approaches that were inappropriate or inadequately supported in this case may be available in other circumstances.

approach comports with the liability and remediation scheme of CERCLA. *First*, as we describe *infra*, there are important distinctions between causation as conceived in the Restatement and causation in the context of CERCLA. Unlike the Restatement's common law causation, CERCLA affixes liability based upon its PRP provisions, which define classes of liable parties based upon a party's statutorily-defined nexus to the contaminated site. And *second*, the concept of "harm" in the Restatement as actual injury does not correspond easily to CERCLA's priorities. Contamination and the cost of remediation are both relevant for the "harm" analysis under CERCLA. Finally, we recognize that the Restatement's emphasis on objective considerations to determine whether apportionment is justified in a given case comports with CERCLA's strict liability scheme. Equitable considerations may play a role in a later contribution action amongst liable parties, but not in an action such as this where the only relevant issue is whether there is a reasonable basis, founded in record evidence, to apportion damages amongst defendants.

1. Causation

Section 433A of the Restatement allows for apportionment of damages where "(a) there are distinct harms,[19] or (b) there is a reasonable basis for

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[19] Comment b of section 433A notes:

Distinct harms. There are other results which, by their nature, are more capable of apportionment. If two defendants independently shoot the plaintiff at the same time, and one wounds him in the arm and the other in the leg, the ultimate result may be a badly damaged plaintiff in the hospital, but it is still possible, as a logical, reasonable, and practical matter, to regard the two wounds as separate injuries, and as distinct wrongs. The mere coincidence in time does not make the two wounds a single harm, or the conduct of the two defendants

determining the *contribution of each cause* to a single harm."[20] RESTATEMENT (SECOND) OF TORTS § 433A(1) (1965) (emphasis added). CERCLA, however, does not require causation as a prerequisite to liability (except with regard to the third-party defense, *see* § 9607(b), not at issue here). Nonetheless, most of the leading cases on joint and several liability under CERCLA have addressed divisibility under § 433A(1)(b).[21] *See, e.g., Bell Petroleum*, 3 F.3d at 902-

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one tort. There may be difficulty in the apportionment of some elements of damages, such as the pain and suffering resulting from the two wounds, or the medical expenses, but this does not mean that one defendant must be liable for the distinct harm inflicted by the other.

[20] Comment d of section 433A notes:

Divisible harm. There are other kinds of harm which, while not so clearly marked out as severable into distinct parts, are still capable of division upon a reasonable and rational basis, and of fair apportionment among the causes responsible. Thus where the cattle of two or more owners trespass upon the plaintiff's land and destroy his crop, the aggregate harm is a lost crop, but it may nevertheless be apportioned among the owners of the cattle, on the basis of the number owned by each, and the reasonable assumption that the respective harm done is proportionate to that number. Where such apportionment can be made without injustice to any of the parties, the court may require it to be made.

[21] The sections of the Restatement that courts have used to establish the rules of joint and several liability under CERCLA are found in the negligence division of the Restatement. As these courts recognize, CERCLA is a strict liability statute. *See, e.g., Hercules*, 247 F.3d at 716; *Township of Brighton*, 153 F.3d at 318. Because there is no comparable divisibility rule in the strict liability portion of the Second Restatement, courts have adapted the negligence rules to strict liability by declining to rely on the portion of the Restatement section that places an initial burden as to causation on the plaintiff. *Compare Hercules*, 247 F.3d at 717,

03; *Monsanto*, 858 F.2d at 172; *Chem-Dyne*, 572 F.Supp. at 810.

Notably, these cases often dealt with simpler facts than those we confront. *Chem-Dyne*, for instance, assumed a case quite different from this one. There, the court stated that "[t]ypically ... there will be numerous hazardous substance generators or transporters who have disposed of wastes at a particular site." 572 F.Supp. at 810. It was in that context—that is, where the question was apportionment among defendants who all disposed of wastes themselves—that *Chem-Dyne* determined that courts could follow the divisibility principles of the Restatement and remain true to CERCLA. In a situation in which the several defendants are all polluters themselves, divisibility under the Restatement standard is indeed a relatively straightforward analysis, and one in which traditional causation concepts are useful. If the court can estimate with some confidence the amount of waste that each defendant disposed of and has a basis for determining that the extent of contamination of the site is proportional to the amount of waste disposed of, then the Restatement approach to apportionment works nicely.

The situation here is different.[22] The three "responsible" parties are: the now-insolvent majority

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and Bell Petroleum, 3 F.3d at 896, *with* RESTATEMENT (SECOND) OF TORTS § 433B(1).

[22] One commentator has noted that trying to apply the Restatement to CERCLA in most cases is like "pushing a round peg through a square hole. Traditional tort law principles falter in the CERCLA context because CERCLA is so unlike a typical tort law cause of action." Lynda J. Oswald, *New Directions in Joint and Several Liability Under CERCLA?*, 28 U.C. DAVIS L. REV. 299, 360 (1995).

owner and operator of the site; the mostly absentee landlord of a portion of the site; and a seller of chemicals shipped to and stored at the site. Each party had an entirely different role in the contamination process, with overlapping effects, and not all "caused" contamination in any meaningful sense.

Most notably, PRP status premised on ownership of a facility does not require *any* involvement in the disposal of hazardous substances. Thus, to speak of a PRP "causing" contamination of its land simply by owning land on which someone else disposes of hazardous wastes is to indulge in metaphor. At the same time, to allow CERCLA defendants, especially landowner PRPs, to prove through traditional causation analysis that they were *not* entirely liable would be to undermine the premise on which the statute designated them as PRPs to begin with. CERCLA requires a *connection*—for example, that the PRP be a landowner "at the time of disposal," *see* § 9607(a)(2)—but no further *causation*. The statute thus departs from Restatement principles by abjuring the traditional "causation" principles in favor of a nexus concept defined by its PRP provisions. Where, as here, the pertinent PRP status is as landowner, the landowner can establish divisibility by demonstrating a reasonable basis for concluding that a certain proportion of the contamination did not originate on the portion of the facility that the landowner owned at the time of the disposal. The arranger nexus is more straightforward, with a focus not on ownership of the facility but rather on the relevant, arranged disposals in light of other contamination at the facility.

2. Harm

A second difficulty that results from relying on tort principles in a scheme not based on tort law concerns the application of the term "harm," used in the

Restatement, as applied to CERCLA. *See* RESTATEMENT (SECOND) OF TORTS § 433A. The CERCLA cost recovery section does not focus on "harm," but rather on "costs of removal or remedial action" and "necessary costs of response."[23] § 9607(a). Thus, when applying the Restatement in the context of CERCLA, the question becomes: What is the "harm" that we are attempting to divide?

There are three possible kinds of "harm" in actions for remediation costs under CERCLA: the initial disposal, the resulting contamination, and the costs of remediating the contamination. Actual injury to individuals or to property, the usual "harms" in a tort suit, are *not* a pertinent consideration; the statute is concerned with averting future injury by remediating contamination, not with compensation for past injuries.

If the harm were the *disposal*, then divisibility based on volume of discharge by operators or by parcel would always make sense, because disposal occurs in specific amounts at specific places. If the harm were *contamination*, then some attempt would have to be made either to justify a direct correlation between disposal and contamination under the specific circumstances or to separate out the leakage that remained as contamination from leakage that either evaporated, was adequately diluted, or for other reasons did not remain on the property in toxic form.[24]

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[23] The statute also mentions "damages for injury to, destruction of, or loss of natural resources" and "costs of any health assessment or health effects study." § 9607(a)(C), (D). These provisions may be informative with regard to the nature of the harm in other cases but are not here applicable.

[24] In many instances, of course—as in *Chem-Dyne*—the various polluters will dispose of the same substance in the same location, so there will be a basis for assuming that each polluter's pro rata

If the harm is the *cost of remediation*, then divisibility would have to be based on the pro rata cost of cleaning up each defendant's contribution to the contamination. That pro rata cost will sometimes differ from the proportion of contamination caused by each defendant, because the cost of removing contamination can vary with geographical considerations, degree of toxicity, the means of extraction used for different toxic substances, or other factors.

In light of a CERCLA liability suit's central purpose—recovering the cost of eradicating contamination—we conclude that it is most useful for purposes of determining divisibility to view the "harm" under CERCLA as the contamination traceable to each defendant. Disposal itself is not the focus of the statute, unless it results in contamination. And the cost of cleaning up the contamination is most analogous to the damages recovered in a tort suit, not to the injury on which liability is based.[25]

3. Equity

Because this case is one in which the harms are not distinct, apportionment must be under Restatement § 433A(1)(b) if it is to be allowed at all. That is, there must be a reasonable basis for determining the contribution of each PRP to the harm. While nothing

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share of the hazardous waste disposed of and of the resulting contamination is the same. *See also Bell Petroleum*, 3 F.3d at 903.

[25] The cost of cleanup of different toxic substances or in different areas of the facility will often be a useful measure of the proportion of the *pertinent* contamination allocable to each defendant. That cost will depend upon factors such as which contamination was serious enough to merit remediation and how thoroughly the soil was contaminated in various areas. Thus, the "harm" allocation analysis may in some instances usefully focus initially on the proportion of costs associated with remedying various aspects of the contamination.

in the statute directly addresses the question whether equitable factors are appropriate for purposes of apportioning liability among joint tortfeasors, all the other circuits that have addressed the issue have held that they are not. We again follow their lead.

In so holding, we begin from the fundamental difference between apportionment and contribution. Apportionment, which is the relevant question in this case, looks to whether defendants may avoid joint and several liability by establishing a fixed amount of damage for which they are liable. Section 433A of the Restatement speaks to this issue. Contribution is a distinct concept. If there is insufficient evidence to support apportionment, jointly and severally liable PRPs may still seek to recover from each other in a later contribution action. *See, e.g.* RESTATEMENT (THIRD) OF TORTS § 23(a) (2000) ("When two or more persons are or may be liable for the same harm and one of them discharges the liability of another by settlement or discharge of judgment, the person discharging the liability is entitled to recover contribution from the other, unless the other previously had a valid settlement and release from the plaintiff."). As we explain below, CERCLA permits equitable considerations to be taken into account in a contribution action amongst PRPs, but CERCLA's strict liability scheme does *not* permit equitable considerations to have any bearing in an action to determine whether defendants have presented sufficient evidence to apportion liability.

Section 9613(f), added to CERCLA in 1986, provides for contribution actions among PRPs once liability to the plaintiffs has been determined. That provision describes, quite generally, the considerations applicable in a contribution action for determining whether one PRP can collect from another a portion of

the costs for which it has been held liable: "In resolving contribution claims, the court may allocate response costs among liable parties using such *equitable factors* as the court determines are appropriate." § 9613(f) (emphasis added).[26] In contrast, CERCLA contains no provision explicitly providing for initial apportionment of liability. And § 433A(1)(b) of the Restatement and the appended commentary concerning divisibility are silent as to equitable considerations.[27] As noted, this circuit heretofore has not addressed divisibility analysis. But the implication from our cases deciding § 9613(f) contribution issues is that the proper time to focus on such factors is *at the contribution phase*, not the liability phase. *See, e.g., Carson Harbor Vill.*, 270 F.3d at 871 (noting that the "contribution provision aims to avoid a variety of scenarios by which a comparatively innocent PRP might be on the hook for the entirety of a large cleanup bill"); *Pinal Creek*, 118 F.3d at 1301 ("A

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[26] Among the equitable factors used in CERCLA contribution cases are the so-called "Gore factors." *See Hercules*, 247 F.3d at 718. Those factors are derived from the amendment that then-Representative Gore introduced in 1980 to alleviate the harshness of mandatory apportionment, which at that time was a part of the bill. *See* 126 CONG. REC. 26782 (1980) (statement of Rep. Gore). Although these factors are appropriate in contribution cases, they are not, for the reasons discussed in the text, appropriate considerations at the liability stage.

[27] The only mention of equity in Restatement § 433A is in comment h, regarding "[e]xceptional cases." Comment h suggests that in cases of insolvent defendants, when an "innocent plaintiff would be forced to bear the share of the loss due to the defendant from whom he could not collect damages," courts may refuse to allocate harm to avoid "injustice to the plaintiff." Because we determine that there is no reasonable basis for apportioning the defendants' harm, we do not reach the question of whether the considerations of comment h are applicable here.

PRP's contribution liability will correspond to that party's equitable share of the total liability and will not be joint and several.").

Other circuits have been careful to delineate the difference between the equitable considerations pertinent to contribution under § 9613(f) and the objective considerations pertinent to divisibility under § 9607(a). *See Hercules*, 247 F.3d at 718; *Township of Brighton*, 153 F.3d at 318; *Bell Petroleum*, 3 F.3d at 901. As the Sixth Circuit has noted, divisibility analysis, unless carefully limited, has the potential to eviscerate the strict liability principles of CERCLA entirely, "because defendants who can show that the harm is divisible, and that they are not responsible for any of the harm" could whittle their liability to zero. *Township of Brighton*, 153 F.3d at 318. Additionally, as *Township of Brighton* also noted in rejecting a fairness-based approach, divisibility analysis is not an invitation to "split the difference" and come up with a "compromise amount." *Id.* at 319.

While it may seem unfair to hold a partial owner liable for all of the contamination cleanup costs, that perceived unfairness is the result of CERCLA's expansive statutory liability scheme. Assuring fairness among PRPs is the proper subject of the contribution stage, not of apportionment at the liability stage. *See United States v. Rohm & Haas Co.*, 2 F.3d 1265, 1280-81 (3d Cir.1993), *overruled on other grounds by United States v. E.I. DuPont De Nemours & Co.*, 432 F.3d 161, 162-63 (3d Cir.2005) (en banc). At the liability stage, CERCLA simply assigns liability to statutorily responsible parties so as to assure that, as between those with *some* connection to the contamination—and who have, it may be assumed, benefited from the contamination-causing process—and those with *none*, such as the taxpayers. Any court-created structure

that would allow PRPs to whittle their share to little or nothing and leave the taxpayers holding the bag may seem more equitable to some PRPs but would violate the basic structure of the CERCLA statutory scheme. Because of such concerns, courts have generally refrained from using an equity-based allocation analysis, so as not to weaken further the strict liability principle basic to CERCLA.

We agree that while joint and several liability need not be universally applied, *see Bell Petroleum*, 3 F.3d at 897, the inquiry as to whether such liability is appropriate must focus strictly on whether there is a reasonable basis for apportionment, *see, e.g., id.* at 901-04. Consequently, in an action under § 9607(a), a court is not to look to equitable considerations, such as relative fault, in determining whether liability is to be joint and several or apportioned.

III. Analysis of Railroads' and Shell's Cercla Liability

We now proceed to apply these fairly straightforward principles to the circumstances of this case. Here, the Railroads were found to be PRPs under § 9607(a)(2), as the owners of a "facility at which ... hazardous substances were disposed of," and Shell was found to be a PRP under § 9607(a)(3), as a person who "arranged for disposal ... of hazardous substances owned or possessed by such person." The first question we address is whether the Railroads and Shell are liable for *all* the cleanup costs at the Arvin site, or, as the district court held, only some of them. The second question, addressed later, is whether Shell is liable for *any* of the harm, as an "arranger."

A. Apportionment of Liability

1. Standard of Review and Burden of Proof

Because we have not heretofore faced a CERCLA apportionment issue directly, there is no Ninth Circuit precedent concerning the standard of appellate review for such an issue. Three circuits have addressed the question, and two separate approaches have emerged.

The Fifth and Eighth Circuits look first to whether there is a reasonable basis for apportioning the harm, an inquiry they consider a question of law reviewed de novo. *See Hercules,* 247 F.3d at 718-19; *Bell Petroleum,* 3 F.3d at 896, 902. These two circuits then examine, as a question of fact reviewed under the clearly erroneous standard, precisely how damages are to be divided. *See Hercules,* 247 F.3d at 718 (holding that "actual apportionment" of damages is a question of fact); *Bell Petroleum,* 3 F.3d at 896 (same).

In contrast, the Sixth Circuit considers divisibility as a whole a factual matter of causation, reviewed entirely under the clearly erroneous standard. *Township of Brighton,* 153 F.3d at 318 n. 13. This view, however, disregards a distinction between conceptual divisibility and actual allocation that we find both persuasive and useful. The latter inquiry can involve the resolution of credibility issues and of conflicting evidence, while the former ordinarily does not.

We believe the most appropriate approach, and the one we therefore adopt here, is the one adopted in *Hercules* and *Bell Petroleum,* with a refinement suggested by Judge Parker's dissent in *Bell Petroleum.* Judge Parker thought that the majority confused the distinction between the "*legal* burden that the single harm at issue caused is of a type capable of apportionment, and the *factual* burden of proving the amount of harm attributable to a particular party."

Bell Petroleum, 3 F.3d at 909 (Parker, J., concurring in part and dissenting in part). We are not sure that there was any such confusion. Rather, an aspect of clear error review is the legal determination whether the party with the burden of proof met that burden; if the party did not and the district court nonetheless ruled for it, then the district court clearly erred. *See Lloyd v. Schlag*, 884 F.2d 409, 415 (9th Cir.1989) (reviewing "whether the district court committed clear error by holding that [plaintiff] had not met his burden of proof"). Thus, although the harm may be *capable* of apportionment, the harm may not actually be *apportionable* in the particular case as a factual matter, given the evidence produced, because the party advocating apportionment has not come forward with the minimum showing needed to meet its burden of proof as to the proper division of liability.

We therefore proceed as follows: We inquire, *first*, whether the particular harm at issue in the case is theoretically capable of apportionment—i.e., whether it could ever be apportioned or whether it is, by nature, too unified for apportionment. That question is one of law, reviewed de novo. *Cf. Taisho Marine & Fire Ins. Co. v. M/V Sea-Land Endurance*, 815 F.2d 1270, 1274 (9th Cir.1987). *Second*, we review for clear error whether the defendant submitted evidence sufficient to establish a reasonable basis for the apportionment of liability, taking into account that the burden of proof is on the party seeking allocation, as well as the district court's actual division of liability.

There is no dispute here on the first, purely legal question—whether the harm is capable of apportionment. *See Bell Petroleum*, 3 F.3d at 896; *Chem-Dyne*, 572 F.Supp. at 810. Some of the contamination on the B & B site occurred before the Railroads' parcel became part of the facility. Only

some of the toxic substances were stored on the Railroads' parcel, and only some of the water on the facility washed over the Railroads' site. As to Shell, only some of the toxic substances spilled on the facility were sold by the company. The different toxic substances vary in their likelihood to leak and in the manner and speed in which they disseminate in ground water. So, conceptually, the contamination traceable to the Railroads and Shell, with adequate information, would be allocable, as would be the cost of cleaning up that contamination.

The questions, then, are whether the district court clearly erred in finding that the Railroads and Shell established a "reasonable basis" for apportionment, *Bell Petroleum*, 3 F.3d at 901, and whether, having so found, the district court properly apportioned the harm.

We recognize that the district court at one point stated that the Railroads failed to "meet their burden of proof" as to divisibility. But its overall ruling was necessarily to the contrary, as the court also stated that it "independently found [in the record] a reasonable basis for apportionment in spite of the parties[']] presentations." Thus, while the district court rejected both defendants' *theories* as to divisibility, it used record evidence it found persuasive to determine apportionment. Whether the district court was correct in this regard is, as we have noted, part of the review of the factual decision regarding apportionment, discussed hereafter. The burden of proof issue thus melds with the merits of the apportionment issue, rather than barring us from considering it.

2. The Railroads

As we have established, if apportionment is to be allowed under the Restatement approach, there must

be a reasonable basis for calculating the connection between the Railroads' PRP status and the relevant harms. Again, the harm we consider is the contamination on the Arvin site. Where, as for the Railroads, the PRPs' responsibility under the statute derives solely from their status as landowner, the PRPs can establish divisibility by demonstrating that discrete portions of the contamination did not originate on land they owned at the time of the toxic disposal.

Here, the district court's severability analysis—after 191 pages of an amended opinion that included over 80 pages of factual findings—ultimately relied on the simplest of considerations: percentages of land area, time of ownership, and types of hazardous products. Although we do not fault the district court's factfinding—its numbers are mostly correct—its legal conclusion that these three factors alone suffice to support apportionment cannot stand.[28] We address each factor below to show why.

a. Land Area

The only court of appeals case that has fully addressed divisibility of *landowner* liability takes a relatively strict approach to apportionment on the basis of land area. In *United States v. Rohm and Haas Co.*, 2 F.3d 1265 (3d Cir.1993), the most analogous CERCLA divisibility case to this one, the Third Circuit held, as do we, that "simply showing that one owns

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[28] We emphasize that our conclusion does not rest simply on the fact that the district court's calculation of the Railroads' share of liability was, as the court recognized, "rough[ ]." It is neither unusual nor fatal to the validity of the resulting allocation that an apportionment determination includes estimates of contribution to contamination based on extrapolation of record facts, as long as the basis for the extrapolation is explained, is logical, and does not disregard other record facts.

only a portion of the facility in question is [not] sufficient to warrant apportionment." *Id.* at 1280.

Like this case, *Rohm and Haas* concerned a landowner PRP and changes in landownership over time. Although the Third Circuit's divisibility analysis is fairly cursory, its reluctance to apportion landowner liability on the basis of land boundaries is informative. *Rohm and Haas* indicates that the mere percentage of land owned by one PRP relative to the entire facility cannot alone be a basis for apportionment, as it does not provide a minimally reliable basis for tracing the proportion of leakage, contamination, *or* cleanup costs associated with the entire parcel.

Contrary to *Rohm and Haas,* the district court's analysis gave star billing to the percentage of land ownership, even in a unified facility.[29] We agree with *Rohm and Haas* that this approach, seemingly straightforward though it is, fails in most circumstances to comport with the "reasonable basis" test, as the facts of this case illustrate.

The Arvin site was a single facility. CERCLA premises landowner liability on ownership of a *facility,* not on ownership of a certain parcel of land that is part of a facility. The operations on the site were dynamic, with fertilizer rigs stored on the Railroad parcel and filled up on the B & B parcel. Empty pesticide cans were stored on the Railroad parcel before they were crushed and disposed of. After the 1978 windstorm, tanks were stored all over the facility, including on the Railroad parcel. A simple calculation of land ownership

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[29] Judge Moore, concurring in the result in *Township of Brighton,* asserted that a court can *never* apportion liability for contamination at a single facility on the basis of geography. *Township of Brighton,* 153 F.3d at 331 n. 12 (Moore, J., concurring in result). We do not agree with Judge Moore in this regard.

does not capture any data that reflect this dynamic, unitary operation of the single Arvin facility.[30]

In addition, the synergistic use of different parts of the Arvin site makes division based on percentage of land ownership particularly untenable. The record shows that B & B leased the Railroad parcel to accommodate its expanding operations. The Railroad parcel added an unquantifiable and perhaps exponential amount to B & B's soil contamination. Were the Railroad parcel not part of the facility, there would have been less overall storage capacity. One can assume that a smaller amount of toxic chemicals would have been delivered to, and spilled on, the Arvin site. The fertilizer rigs, for example, were stored almost exclusively on the Railroad parcel. Had that parcel not been available, less fertilizer might have been delivered to—and leaked onto—the Arvin parcel. As these descriptions suggest, nothing in the record supports a conclusion that the leakage of contaminants that ended up on the B & B parcel occurred on each parcel in proportion to its size.

Instead, given the circumstances of this case, more pertinent comparisons would be the proportion of the amount of chemicals stored, poured from one container to another, or spilled on each parcel. For example, were adequate records kept, it would be possible to estimate the amount of leakage attributable to activities on the Railroad parcel, how that leakage

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[30] In its discussion of the Railroads' apportioned liability, the district court found that B & B used the Railroad parcel as part of its total agricultural-chemical operations, and it earlier cited approvingly to documents describing the land as "an integral part of the adjacent farm chemical distribution facility." The dissent from denial of rehearing en banc therefore wrongly characterizes our description of the site as "appellate fact-finding." *See* Dissent at 958-60.

traveled to and contaminated the soil and groundwater under the Arvin parcel, and the cost of cleaning up that contamination.

But none of this data is in the record. It may well be that such information is, as a practical matter, not available for periods long in the past, when future environmental cleanup was not contemplated. Unlike records concerning the amount of toxic chemicals produced by a given operator of a facility, records that separate out, with any precision, the amount of toxic chemicals stored on one part of a facility as opposed to another would have had little utility to B & B, the operator of the facility, and none to the Railroads, the owners of the parcel. This observation is true in spades for the more directly pertinent data, such as the amount of leakage on the Railroad parcel, the amount of that leakage that flowed onto the B & B parcel, and the amount of that residue that remained as contamination under the B & B parcel when the cleanup began.

So the failure to keep these records is quite understandable. But these practical considerations cannot justify a "meat-axe" approach to the divisibility issue, premised on percentages of land ownership, as a means of adjusting for the difficulties of proving divisibility with precision when PRP status is based on land ownership alone. Such an approach would be tantamount to a disagreement with the imposition of no-fault land ownership liability. Congress, however, created precisely such liability, placing the responsibility to pay for environmental cleanup on parties, such as the Railroads, that profited from the circumstances giving rise to the contamination so that the taxpayers are not left holding the tab. The risk of lack of adequate information for meaningful division of harm therefore must rest on the responsible parties,

even when that information is extremely hard to come by.

b. Period of Ownership

Just as the district court's land area calculations did not correspond to the harms in this case, its simple fraction based on the time that the Railroads owned the land cannot be a basis for apportionment. The fraction it chose assumes constant leakage on the facility as a whole or constant contamination traceable to the facility as a whole for each time period; no evidence suggests that to be the case. Again, if adequate information were available, it would make sense to eliminate the Railroads' liability for the period before B & B leased the Railroad parcel. *See, e.g., Rohm and Haas,* 2 F.3d at 1280. The evidentiary vacuum concerning the amount of contamination traceable to the pre-lease period, however, precludes any such calculation here.

c. Types of Hazardous Products

While many of the district court's calculations were factually correct but legally insufficient, its decision to assign a two-thirds fraction to represent the present types of hazardous products contains a basic factual error. All three chemicals were on the Railroad parcel at some time. There is no evidence as to which chemicals spilled on the parcel, where on the parcel they spilled, or when they spilled. Yet, there *is* evidence that there may well have been leakage on the Railroad parcel of D-D, the chemical the district court excluded from its calculations. Given the record, the district court clearly erred in its attempt to rely on the proportion of hazardous products present on the Railroad parcel.

d. Conclusion

It will often be the case that a landowner PRP will not be able to prove in any detail the degree of contamination traceable to activities on its land. A landowner PRP need not be involved at all in the disposal of hazardous chemicals and so will often have no information concerning that disposal or its impact. The net result of our approach to apportionment of liability, consequently, may be that landowner PRPs, who typically have the least direct involvement in generating the contamination, will be the least able to prove divisibility. And contribution "is not a complete panacea since it frequently will be difficult for defendants to locate a sufficient number of additional, solvent parties." *O'Neil v. Picillo*, 883 F.2d 176, 179 (1st Cir.1989).

While the result may appear to fault a landowner PRP for failing to keep records proving the minor connection of its land to the contamination on the facility as a whole, CERCLA is not a statute concerned with allocation of fault. Instead, CERCLA seeks to distribute economic burdens. Joint and several liability, even for PRPs with a minor connection to the contaminated facility, is the norm, designed to assure, as far as possible, that *some* entity with connection to the contamination picks up the tab. Apportionment is the exception, available only in those circumstances in which adequate records *were* kept and the harm *is* meaningfully divisible.

In sum, although most of the numbers the district court used were sufficiently exact, they bore insufficient logical connection to the pertinent question: What part of the contaminants found on the Arvin parcel were attributable to the presence of toxic substances or to activities on the Railroad parcel? We therefore reject the district court's apportionment

calculation and hold that the Railroads have failed to prove any reasonable basis for apportioning liability for the costs of remediation.

3. Shell

Shell's contribution to the contamination of the Arvin site is easier to isolate than that of the Railroads', as it involved ascertainable pollutants entering the soil in a specific way. Shell thus had a greater prospect of succeeding on divisibility than did the Railroads, as there is *some* volumetric basis for comparing its contribution to the total volume of contamination on the Arvin site.

Nonetheless, the evidence actually produced was insufficient to allow even a rough approximation of the contamination remaining on the facility, either directly or through the presumption that the pro rata cost of remediating contamination is likely to be equivalent to a PRP's pro rata share of contamination. Indeed, Shell produced only evidence concerning leakage.

Such leakage or disposal evidence cannot suffice in the present circumstances as a basis for apportioning the harm in question. As we have explained, *contamination*—as distinct from leakage—is the necessary consideration. Where there is disposal of multiple contaminants, courts have demanded a "showing [of] a relationship between waste volume, the release of hazardous substances, and the harm at the site." *Monsanto*, 858 F.2d at 172. Factors such as "relative toxicity, migratory potential, and synergistic capacity of the hazardous substances" are relevant to demonstrating this relationship. *Id.* at 172 n. 26. Alternatively, volumetric calculations of *contaminating* chemicals—those *remaining* in the environment and requiring cleanup—*could be* sufficiently specific for apportionment. *See Hercules*,

247 F.3d at 719; *Bell Petroleum*, 3 F.3d at 903. But Shell provided no evidence regarding such factors. It thus failed to prove whether its leaked chemicals contaminated the soil in any specific proportion as compared to other chemicals spilled at the site. *See United States v. Agway, Inc.*, 193 F. Supp.2d 545, 549 (N.D.N.Y.2002) (noting that defendants whose products have become commingled in the soil "face an uphill battle in attempting to demonstrate that volumetric contribution is a reasonable basis for apportioning liability of a single harm").

To fill these evidentiary gaps, the district court assumed equal contamination and cleanup cost from all the chemicals' leakage. This methodology entirely failed to account for the possibility that leakage of one chemical might contribute to more contamination than leakage of another, because of their specific physical properties. Similarly, the cost of cleanup depends upon which contaminants are present; some contaminants are more expensive than others to extract from the soil.

Moreover, even as an approximation of *leakage*, the district court's calculations were too speculative to support apportionment. *Chem-Nuclear* is informative in this regard. In *Chem-Nuclear*, the defendant disposed of drums of hazardous waste at several facilities. 292 F.3d at 255. At least eighty drums found at a single site were attributable to the defendant. *Id.* The defendant could not prove, however, that it was responsible only for those eighty drums, and therefore was not entitled to apportionment. *Id.* at 259-61. Although the defendant provided evidence supporting inferences regarding where its drums went, the court refused to accept these inferences as sufficient proof. *Id.* at 260.

Here, the court estimated the volume of Shell's chemicals that leaked from each transfer based on data samples that do not readily extrapolate to total leakage over the entire twenty-three-year period that Shell supplied B & B with D-D. The court used figures from only six years of B & B's purchases of Shell D-D to calculate the average D-D transferred at the Arvin site each year, yet provided no basis for assuming equal purchases each year. The court then based its estimate of the amount of D-D spilled during each transfer on guesses by witnesses.[31] Also, although D-D was known to leak when sight gauges on D-D rigs broke, the court had no evidence of how much D-D leaked under these circumstances and, therefore, did not add any quantity for sight gauge leakage into the calculation. Even if each of these estimates alone might have been reasonable, the resulting combined estimate is too speculative to serve as an accurate basis for ascertaining leakage, let alone contamination or the costs of cleaning up the contamination.[32]

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[31] For the quantity of D-D that spilled during transfer from Shell's carriers' trucks to the D-D rigs, for example, the court relied on estimates of witnesses that the spill was between a cup and a quart. It then calculated "3 cups x 23 years = 2,691 cups => 168 gallons of D-D."

[32] There is something of a circuit split on the degree of specificity of proof necessary to establish the amount of liability apportioned to each PRP. According to some courts, proving up the precise proportion attributable to each PRP is a "very difficult proposition," *Control Data Corp. v. S.C.S.C. Corp.*, 53 F.3d 930, 934 n. 4 (8th Cir.1995), requiring "concrete and specific" evidence in support of any proposed apportionment, *Hercules*, 247 F.3d at 718. The defendant cannot rely on a "chain of possible inferences." *Chem-Nuclear*, 292 F.3d at 260. In contrast, other courts have permitted informal estimates or data rather than more exact calculations. *See Bell Petroleum*, 3 F.3d at 903-04 (allowing estimation of the proportion of contamination produced by each of

Again, Shell's harm was *capable* of apportionment. Shell could have provided data showing the volume of chemicals shipped to B & B every year, or more precise estimates of the average volume of leaked chemicals during the transfer process. Data connecting the properties of the various chemicals leaked at the site to the likelihood that they contributed to the contamination could have been presented and considered. But the record before us provides none of that information, most likely because Shell put its eggs in the no-liability basket.

In the end, the district court's apportionment analysis with regard to Shell came closer to meeting the legal standard than the method it used with respect to the Railroads. We hold, nonetheless, that on the facts of this case as the district court found them, there was no reasonable basis for apportioning the pertinent harm caused by Shell.

B. "Arranger" Liability

Under CERCLA, "any person who by contract, agreement, or otherwise arranged for disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous substances owned or possessed by such person" is

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a series of successive operators of a facility, where reliable approximations were simple because there was a single chemical produced by the successive operators each of whom operated the facility similarly); *see also Hercules*, 247 F.3d at 719 (relying on *Bell Petroleum*, 3 F.3d at 895-96, and holding that the defendant need not show that there was no possibility that it contributed to the harm, because certain approximations can suffice). Aside from noting, as we have, *supra* n. 27, that logical, supportable inferences from the record facts are, as always, permissible, we need not weigh in on this dispute, as the district court's extrapolations could not be upheld under even a forgiving standard.

liable. § 9607(a)(3). Shell claims that (1) the district court applied the wrong legal standard in determining whether Shell was an "arranger" under § 9607(a); (2) the "useful product" doctrine precludes imposition of "arranger" liability on Shell; (3) Shell lacked ownership and control over the chemicals at the time of the transfers and thus the district court could not find that it had arranged them; and (4) because D-D evaporates or disperses rather than remaining in toxic form in the soil, the district court erred when it determined that Shell contributed to the groundwater contamination. We reject these contentions and affirm the district court's ruling on the "arranger" issue.

We review the district court's interpretation of CERCLA to determine the legal standard for arranger liability as a question of law, reviewed de novo. *Carson Harbor Vill.*, 270 F.3d at 870. We review the district court's factual determinations regarding Shell's operations for clear error. *W. Prop. Serv. Corp. v. Shell Oil Co.*, 358 F.3d 678, 685 (9th Cir.2004).

1. Requirements for "Arranger" Liability

CERCLA does not define "arrange[ ]." We have avoided giving the term "arranger" too narrow an interpretation to avoid frustrating CERCLA's goal of requiring that companies responsible for the introduction of hazardous waste into the environment pay for remediation. *Pakootas v. Teck Cominco Metals, Ltd.*, 452 F.3d 1066, 1081 (9th Cir.2006); *Cadillac Fairview/Cal., Inc. v. United States*, 41 F.3d 562, 565 n. 4 (9th Cir.1994) (per curiam) (*citing with approval United States v. Aceto Agric. Chems. Corp.*, 872 F.2d 1373, 1380 (8th Cir.1989)); *see also Jones-Hamilton Co. v. Beazer Materials & Servs., Inc.*, 973 F.2d 688, 694-95 (9th Cir.1992) (discussing *Aceto*, 872 F.2d at 1384). Accordingly, we have recognized, in addition to "direct" arranger liability, a "broader"

category of arranger liability, *see United States v. Shell Oil Co.*, 294 F.3d 1045, 1054-55 (9th Cir.2002), in which disposal of hazardous wastes is a foreseeable byproduct of, but not the purpose of, the transaction giving rise to PRP status.

"Direct" arranger liability—also referred to as "'traditional' direct" arranger liability—involves transactions in which the central purpose of the transaction is disposing of hazardous wastes. *See id.*; *see, e.g., Cadillac Fairview*, 41 F.3d at 563-65 (involving rubber companies that transferred contaminated styrene to Dow Chemical for reprocessing); *Catellus Dev. Corp. v. United States*, 34 F.3d 748, 749-50 (9th Cir.1994) (involving a company that sold used automotive batteries to a lead reclamation plant). In contrast, "broader" arranger liability involves transactions that contemplate disposal as a *part* of, but not the focus of, the transaction; the "arranger" is either the source of the pollution or manages its disposal. *See Shell Oil*, 294 F.3d at 1058. In the "broader" arranger liability cases, such as *Shell Oil*, we examined the connection between the alleged arranger transaction and the disposal and decided whether the transaction necessarily constituted an arrangement for disposal of hazardous substances, whatever immediate form it may have taken.

These broader arranger cases can involve situations, like the present one, in which the alleged arrangers did not contract directly for the disposal of hazardous substances but did contract for the sale or transfer of hazardous substances, which were then disposed of. *See, e.g., Fla. Power & Light Co. v. Allis Chalmers Corp.*, 893 F.2d 1313, 1315, 1318 (11th Cir.1990) (involving purchaser and recycler that sued manufacturer of transformers for cleanup costs from later disposal); *Mathews v. Dow Chemical Co.*, 947

F.Supp. 1517, 1519-20 (D.Colo.1996) (involving neighbors of chemical company who sued manufacturer of paint thinner for contamination resulting from packaging paint thinner); *Courtaulds Aerospace, Inc. v. Huffman*, 826 F.Supp. 345, 347-48, 353-54 (E.D.Cal.1993) (involving neighbor of smelting plant who sued companies that contracted with plant for burning and smelting of copper wire for resulting contamination). There are no Ninth Circuit cases in this category.[33]

The inclusion of such circumstances within the "arranger" concept, however, accords with the statutory language and structure as a whole. To be an "arranger," one must "arrange[ ] for disposal or treatment, or arrange [ ] with a transporter for transport for disposal or treatment, of hazardous substances ...." § 9607(a)(3). CERCLA's definition of "disposal," in turn, includes "the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or constituent thereof may enter the environment or be ... discharged into any waters, including ground waters."

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[33] Although *Shell Oil* involved "broader" arranger liability, it concerned "arranger" liability of a customer, rather than a producer, of hazardous materials. 294 F.3d at 1056. There, the defendant oil companies sought to hold the United States liable as an "arranger" because the federal government had purchased large quantities of high octane fuel for military use; the process used by the oil companies to refine the fuel resulted in toxic waste that the oil companies later dumped at a site in California. *Id.* Because the United States was the end purchaser, never owned the intervening toxic products used in the refining process, and did not contract out the crucial, waste-producing intermediate step, we held that it was not an arranger under § 9607(a)(3). *Id.* at 1056-59.

§ 6903(3) (referred to by § 9601(29)). That "disposal" includes such unintentional processes as "leaking" indicates that "disposal" need not be purposeful. *See Carson Harbor Vill.*, 270 F.3d at 880 (holding that "leaking" may not "require affirmative ... conduct" (internal quotation marks omitted) (quoting and adopting interpretation of *United States v. CDMG Realty Co.*, 96 F.3d 706, 714 (3d Cir.1996))). Thus, an entity can be an arranger even if it did not intend to dispose of the product. Arranging for a transaction in which there necessarily would be leakage or some other form of disposal of hazardous substances is sufficient.

2. "Useful Product" Doctrine

While adopting a generally expansive view of arranger liability, we have refused to hold manufacturers liable as arrangers for selling a useful product containing or generating hazardous substances that *later* were disposed of. *See, e.g., 3550 Stevens Creek Assocs. v. Barclays Bank of Cal.*, 915 F.2d 1355, 1362-65 (9th Cir.1990). As *Stevens Creek* and other "useful product" cases recognize, liability cannot extend so far as to include *all* manufacturers of hazardous substances, on the theory that there will have to be disposal of the substances some time down the line, *after* it is used as intended. *See, e.g., Stevens Creek*, 915 F.2d at 1362-65 (refusing to hold manufacturer liable for costs of removing asbestos from building); *Fla. Power & Light*, 893 F.2d at 1318-19 (refusing to hold manufacturer of transformers liable for subsequent release of chemicals upon disposal of transformers). Also, the asserted liability in "useful product" cases generally involved only the normal use of those chemicals. *See, e.g., Jordan v. S. Wood Piedmont Co.*, 805 F.Supp. 1575, 1577 (S.D.Ga.1992) (involving the sale of chemicals to treat wood and the

contamination from the wood treatment process); *Edward Hines Lumber Co. v. Vulcan Materials Co.*, 685 F.Supp. 651, 653 (N.D.Ill.1988) (same).

The useful product cases have no applicability where, as here, the sale of a useful product necessarily and immediately results in the leakage of hazardous substances. In that circumstance, the leaked portions of the hazardous substances are *never* used for their intended purpose. *See Zands v. Nelson*, 779 F.Supp. 1254, 1262 (S.D.Cal.1991) (stating that "gasoline is no longer a useful product after it leaks into, and contaminates, the soil"); *see also Aceto*, 872 F.2d at 1381 (rejecting application of the useful product doctrine where "waste is generated *and disposed of* contemporaneously with the process" (emphasis added)).

Here, although Shell sold B & B a useful product, leakage of some of that product *before* B & B could use it was both inherent in the transfer process arranged by Shell and contemporaneous with that process.[34] Shell arranged for delivery of the substances to the site by its subcontractors; was aware of, and to some degree dictated, the transfer arrangements; knew that some leakage was likely in the transfer process; and provided advice and supervision concerning safe transfer and storage. Disposal of a hazardous substance was thus a necessary part of the sale and delivery process.

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[34] For this reason, we also reject Shell's argument that, because manufacturers are taxed to provide money for the Superfund, Congress could not, without more, have intended for them to be subject to liability as arrangers. *See* 26 U.S.C. §§ 4661, 4662. Shell's liability derives not from its role as a manufacturer of a useful product but rather from its role in leakage prior to use. The Superfund tax is wholly irrelevant to the latter imposition of liability and certainly does not bar it.

Put another way, the district court did not assign arranger liability to Shell for contamination resulting from the application of Shell's useful products to the soil as fertilizers or fumigants, or for disposal of contaminated soil after the products were used. Instead, the district court assigned arranger liability on the portion of product that never made it to the fields for its intended use but was disposed of prior to use. Because Shell's liability here stems from the leaked chemicals rather than the fertilizer that was used as fertilizer, the useful product doctrine is not applicable.

3. Control and Ownership

Much of the district court's analysis relies on the factual determination that spills would necessarily occur during the transfer of Shell's chemicals to B & B. Shell maintains that this finding was inadequate, because Shell did not itself transport the chemicals or participate in transferring the chemicals to B & B's containers. Central to this contention is Shell's insistence that it lacked ownership and control of the chemicals at the time of transfer and so could not be an "arranger." We do not agree that the district court's findings about Shell's involvement were insufficient to support "arranger" liability.

There was evidence before the district court that: (1) Spills occurred *every time* the deliveries were made; (2) Shell arranged for delivery and chose the common carrier that transported its product to the Arvin site; (3) Shell changed its delivery process so as to require the use of large storage tanks, thus necessitating the transfer of large quantities of chemicals and causing leakage from corrosion of the large steel tanks; (4) Shell provided a rebate for improvements in B & B's bulk handling and safety facilities and required an inspection by a qualified engineer; (5) Shell regularly

would reduce the purchase price of the D-D, in an amount the district court concluded was linked to loss from leakage; and (6) Shell distributed a manual and created a checklist of the manual requirements, to ensure that D-D tanks were being operated in accordance with Shell's safety instructions.

The parties vigorously dispute whether, given these facts, Shell owned the pesticide during the transfer and controlled the transfer process. Although the district court addressed these questions and resolved them against Shell, we do not enter this controversy. The text of the statute does not require that the arranger own the hazardous wastes, either at the time the "arranger" arranged for the transaction or at the time of transfer of ownership. *See Pakootas*, 452 F.3d at 1081. Indeed, to require ownership at the time of disposal "would make it too easy for a party, wishing to dispose of a hazardous substance, to escape by a sale its responsibility to see that the substance is safely disposed of." *Catellus*, 34 F.3d at 752. Nor is control a statutory requirement, *Cadillac Fairview*, 41 F.3d at 565, although it has been viewed as a pertinent consideration in cases quite different from this one.

Where an owner of hazardous substances *directly* "arranges" for disposal—by, for example, using a hazardous substance disposal company—that owner is plainly an "arranger" even if it has nothing more to do with disposal. *See, e.g., Catellus*, 34 F.3d at 752. In "broader" arranger liability cases, however, we have tended to view control as a "crucial element" in determining whether the party arranged for disposal. *Shell Oil*, 294 F.3d at 1055. We also have viewed ownership of hazardous substances at the time of disposal as an important factor in nontraditional, indirect arranger liability cases. *See Jones-Hamilton*, 973 F.2d at 695 (*relying on Aceto*, 872 F.2d at 1380).

None of these cases, however, indicates that ownership or control at the time of transfer are the sine qua non of nontraditional arranger liability. Instead, ownership and control at time of disposal are useful indices or clues toward the end of "look[ing] beyond defendants' characterizations to determine whether a transaction in fact involves an arrangement for the disposal of a hazardous substance." *Aceto*, 872 F.2d at 1381. In *Shell Oil*, for example, the government *never* owned the chemicals before disposal occurred, so control over the substances was an important factor in determining whether or not the government could have "arranged" for disposal. *Shell Oil*, 294 F.3d at 1057-59.

Here, ownership at the time of disposal is not an informative consideration, and control is informative only in light of additional considerations. Unlike in *Shell Oil*, where the absence of *any* ownership or control was a clue concerning whether the sales transaction necessarily contemplated disposal as an inherent part of the transaction, Shell here owned the chemicals at the time the sale was entered into. The statute requires nothing more in terms of ownership. We therefore need not determine the precise moment when ownership transferred to B & B. As to the control question, the district court's findings, recited above, demonstrate that Shell had sufficient control over, and knowledge of, the transfer process to be considered an "arranger," within the meaning of CERCLA, for the disposal of the chemicals that leaked.

4. Groundwater Contamination

Shell, finally, contends that the court erred when it determined that it contributed to the groundwater contamination, maintaining that D-D evaporates or disperses rather than remaining in toxic form in the soil. The district court's analysis on this issue is factually complex and based on several weeks of

testimony. The district court made specific findings that D-D can indeed enter groundwater. Those findings are based on the testimony of experts whom the court found persuasive. In light of the complexity of the science and the substantial expert evidence supporting the finding, the district court's determination was not clearly erroneous.

IV. Conclusion

The district court erred in determining that the harm in this case could be apportioned on this record. Given the district court's erroneous approach and the paucity of record evidence, there is no reasonable basis for apportioning the damages attributable to the Railroads' activity. Shell's liability is a closer call, but the evidence on the record in that regard is also insufficient to support apportionment.

The district court followed the proper analysis in finding that Shell is liable as an arranger. Shell arranged for the sale and transfer of chemicals under circumstances in which a known, inherent part of that transfer was the leakage, and so the disposal, of those chemicals.

We therefore reverse as to the district court's finding on apportionment. We affirm the district court's findings regarding both the Railroads' and Shell's liability. The Railroads and Shell are jointly and severally liable for the harm at the Arvin site, except with regard to the so-called "Dinoseb hot spot."[35] We

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[35] The district court found that the "Dinoseb hot spot" was a discrete area contaminated by Dinoseb (a Dow product) as the result of a major spill in 1983, that Shell did not manufacture or ship that product, and that Shell thus bore no responsibility for any part of the $1.3 million cost of cleaning up this discrete spill. The governments did not challenge this finding on appeal. That finding therefore stands, and the district court should not include

remand for further proceedings not inconsistent with this opinion.

REVERSED in part and AFFIRMED in part.

BEA, Circuit Judge, with whom KOZINSKI, Chief Judge, O'SCANNLAIN, KLEINFELD, GOULD, TALLMAN, CALLAHAN, and N.R. SMITH, Circuit Judges, join, dissenting from the order denying the petition for rehearing en banc:

The panel applies CERCLA[1] in a novel and unprecedented way to impose impossible-to-satisfy burdens on CERCLA defendants. The panel's interpretation of CERCLA "arranger" liability[2] creates intra- and inter-circuit conflicts in an area of the law where uniformity among circuits is of paramount importance. *See* Panel Op. at 935-36 (noting CERCLA's "policy favoring national uniformity so as to discourage illegal dumping in states with lax liability laws" (citation omitted)). Further, the panel's unreasonable application of CERCLA apportionment law imposes joint and several liability on CERCLA defendants where Congress did not so intend.

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the $1.3 million cleanup costs for the "Dinoseb hot spot" in the calculation of Shell's liability. Because we therefore do not hold Shell liable for this Dow product, the dissent from denial of rehearing en banc is wrong when it claims we err by holding Shell liable for "contamination from products Shell did not sell to B & B." Dissent at 962-63 n. 22.

[1] Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"), 42 U.S.C. §§ 9601-9675.

[2] Under CERCLA, an entity that "arrange[s] for disposal or treatment ... of hazardous substances" is strictly liable for the clean-up costs. 42 U.S.C. § 9607(a)(3).

Our national policy on toxic spills or disposals is quite clear; it does not allow for dithering. Anyone who owned or used the land when or after the pollution entered it is potentially liable for its clean-up.[3] It does not matter how the toxic materials entered the land; that others may also be potentially liable or that reasonable stewardship was exercised are simply not defenses.

But "potentially liable" does not mean "totally liable." Just as CERCLA allows the landowner or the land user to prove the pollution entered the land *before* he had anything to do with the land, he can also prove others caused the pollution, in whole or in part,[4] and that he is liable only for his apportioned share of the pollution.

The panel's recent amendments to its opinion do take a step in the right direction by aligning the Ninth Circuit with our sister circuits on CERCLA apportionment law.[5] As the amended panel opinion notes, courts follow Restatement (Second) of Torts ("Restatement") principles in apportioning the harm between defendants held strictly liable under

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[3] In addition, CERCLA imposes liability on persons who "arranged for disposal or treatment ... of hazardous substances," and persons who accepted "hazardous substances for transport to disposal or treatment facilities." 42 U.S.C. § 9607(a)(3), (4).

[4] *See* 42 U.S.C. § 9607(b)(3).

[5] Henceforth, CERCLA apportionment in the Ninth Circuit will be governed—not by a test that allows a landowner to avoid joint and several liability only with "perfect information" that portions of the contamination are "in no respect traceable" to its land—but by a "reasonable basis" test under the Restatement (Second) of Torts § 433A(1)(b). *See* Panel Op. at 938 (holding a landowner can "establish divisibility by demonstrating a *reasonable basis* for concluding that a certain proportion of the contamination did not originate" on its facility (emphasis added)).

CERCLA. *See* Panel Op. at 939. Under the Restatement, and now the amended panel opinion, apportionment is permissible so long as the evidence allows the court to make "a reasonable estimate that will fairly apportion liability." *Id.* at 936 n. 18 (citation omitted).

But although the panel's amended opinion pays lip-service to the Restatement test, the panel then proceeds effectively to disregard it. Purporting to require only a "reasonable estimate" for apportionment, the panel imposes joint and several liability for the *entire* clean-up cost of a contaminated facility on an absentee landlord who leased a parcel: (1) that constituted 19.1% of the facility that caused the contamination; (2) for only 13 of the 29 years during which the contamination occurred (45% of the time); and (3) the contamination on which could have caused no more than 10% of the overall contamination. *See United States v. Atchison, Topeka & Santa Fe Ry. Co.*, Nos. CV-F-92-5068 OWW, CV-F-96-6226 OWW, CV-F-96-6228 OWW, 2003 WL 25518047, at *88 (E.D.Cal. July 15, 2003). If this evidence does not provide a "reasonable estimate" for apportionment of liability, I do not see how—short of "perfect information" sufficient to trace every molecule of pollution to the landlord's parcel[6]—apportionment could ever be possible under CERCLA. The panel's amendments thus go only half way by adopting the correct prism through which to look at the evidence. But it is not

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[6] For the same result, albeit with a different, and now abandoned, verbal formulation, see the panel's original opinion: *United States v. Burlington Northern & Santa Fe Ry. Co.*, 502 F.3d 781, 801 (9th Cir.2007) (allowing CERCLA apportionment only with proof by "perfect information" "that portions of the contamination are in no respect traceable" to the landowner's facility), *amended by order denying petition for rehearing en banc.*

enough to use new spectacles. One must still look at the evidence. The fact remains, and as the panel expressly holds, the district court did not commit clear error in finding a reasonable basis for apportionment of liability. *See* Panel Op. at 943 ("[W]e do not fault the district court's factfinding ...."). Regardless, the panel rejects the meticulous apportionment determinations of the district court, issued in a 191-page opinion, as "legally insufficient" for relying on "the simplest of considerations." *Id.* at 943, 945.

To denigrate by adjectives is not to reason, much less to explain. Holding the district court's calculations are "simple" does not even begin to determine whether those calculations were clear error, or whether the calculations provide a "reasonable estimate" to apportion liability. As Justice Oliver Wendell Holmes, Jr., said, "I would not give a fig for the simplicity this side of complexity, but I would give my life for the simplicity on the other side of complexity."[7] The panel turns Justice Holmes's eloquent statement on its head: Instead of commending the district court for finding simplicity after navigating 191 pages of complexity, the panel rebukes the district court, contending that the district court's careful findings of fact—though not clear error—are not worth a fig.

While at it, the panel imposes "arranger" liability on Shell Oil for agricultural fertilizers that were spilled on the site by the buyer of Shell's product, shipped by a common carrier in non-defective truck tankers, *F.O.B. delivery point.*[8] The panel's imposition of arranger

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[7] http:// en. wikiquote. org/ wiki/ Oliver_ Wendell_ Holmes'_ Jr.

[8] "FOB" means "free on board" and "when the term is F.O.B. the place of destination, the seller must at his own expense and risk transport the goods to that place and there tender delivery of them." U.C.C. § 2-319(1)(b).

liability on a mere seller, which relinquished control over its products upon delivery and before spillage occurred, goes far beyond the statutory language and creates inter- and intra-circuit splits. *See AM Int'l, Inc. v. Int'l Forging Equip. Corp.*, 982 F.2d 989, 999 (6th Cir.1993) ("[C]ourts ... have consistently held that the mere sale of a product is not 'arranging for disposal' under [CERCLA]."); *United States v. Shell Oil Co.* ("*McColl*"), 294 F.3d 1045, 1055, 1057 (9th Cir.2002) (requiring "actual control" over the hazardous products as a "crucial element" of arranger liability). The panel further holds Shell jointly and severally liable for the entire contamination on the facility—including contamination from products Shell did not even sell. *See* Panel Op. at 945-48.

True, the land on which the facility operator spilled the toxic fluids encompassed only 4.7 acres. But the panel's legal errors will spread over this Circuit's nine states and 1.3 million square miles, to lots large and small.

I respectfully dissent from our decision not to rehear this case en banc.

I.

This case involves environmental contamination caused by a now-defunct company, Brown & Bryant ("B & B"), which owned and operated an agricultural chemical distribution facility ("B & B parcel") from 1960 to 1989. Panel Op. at 930. In 1975, fifteen years into its operation, B & B leased from the Defendant-Railroads ("the Railroads") a contiguous parcel of land ("the Railroad parcel") located west of the B & B parcel. *Id.* at 930. The B & B parcel comprised 3.8 acres; the Railroad parcel comprised 0.9 acres. *Id.* At its facility, B & B stored the chemicals D-D, Nemagon, and Dinoseb. *Atchison*, 2003 WL 25518047, at *4.

Throughout its operation, B & B discharged contaminated wastewater into a sump that was used to wash agricultural equipment and into a pond, both of which were located on the B & B parcel. *Id.* at *12, *16. Neither the sump nor the pond were, at first, lined so as to be impervious. *See id.* at *8.

The government asserted B & B's activities on the Railroad parcel may have contaminated the groundwater through: (1) focused infiltration of contaminants into the groundwater; and (2) drainage from the Railroad parcel onto the pond located on the B & B parcel. *Id.* at *10-12. As to the first theory, the government could not identify any areas on the Railroad parcel where infiltration into the groundwater actually occurred. *Id.* at *11. Indeed, it was "undisputed that the pond, the sump, and the dinoseb spill area, all of which are located on the B & B parcel, were and are the primary sources of the groundwater contamination." *Id.* at *12. As to the second theory, the district court found a "substantial dispute" remained over whether rainfall was "sufficient to generate the quantity of runoff that would have been necessary" for drainage of chemicals from the Railroad parcel to the B & B parcel. *Id.* at *11.

The district court found "[t]he levels of chemical contamination on and under B & B parcel are substantially higher than any of the reported detections on and under the Railroad parcel." *Id.* Specifically, the district court found:

> [R]eleases at the Railroad parcel could not have contributed more than ten [percent] (10%) of the overall site contamination given the fact that the predominant activities conducted on the Railroad parcel through the years were storage and some washing and

> rinsing of tanks, other receptacles, and chemical application vehicles. Mixing, formulating, loading, and unloading of ag-chemical hazardous substances, which contributed most of the liability causing releases, were predominantly carried out by B & B on the B & B parcel.

Id. at *88.

B & B purchased the agricultural product D-D from Shell pursuant to a non-exclusive marketing agreement for the resale of Shell D-D. *Id.* at *4-5. Shell shipped D-D to the B & B facility by common carrier trucks "FOB Destination." *Id.* at *5. There was no evidence the transportation caused any leakage or that the tanks carried by the trucks leaked. Upon arrival, the contents of the trucks were transferred to B & B's storage tanks, during which D-D spills regularly occurred. *Id.* at *20. The district court found the "stewardship" of D-D passed to B & B when the common carrier arrived at the B & B facility, and *before* the transfer of D-D was attempted to B & B's storage tanks.[9] *Id.* at *23. Nevertheless, the panel holds Shell exercised control over the transfer process.

Pursuant to their authority under CERCLA, the California Department of Toxic Substances Control

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[9] The amended panel opinion notes the common carrier, and not B & B employees, transferred the D-D from the trucks to the storage tanks before the early 1980s. *See* Panel Op. at 931 n. 5. The panel states it was only in the early 1980s that B & B employees started conducting the transfer themselves. *Id.* This is of no material consequence. If, as the district court found, the stewardship of the D-D passed to B & B *before* the transfer occurred, it is irrelevant whether B & B employees or the common carrier employees executed the transfer. In either case, B & B, not Shell, retained "stewardship" over the D-D and the transfer process.

("DTSC") and the U.S. Environmental Protection Agency ("EPA") cleaned up the contamination on the B & B facility. Panel Op. at 931-32.

"None of the contamination requiring immediate remediation was on the Railroad parcel." *Id.* Thereafter, EPA and DTSC filed this CERCLA action against B & B, the Railroads, and Shell for reimbursement of their clean-up costs.

The district court held the Railroads and Shell liable under CERCLA. The district court apportioned 9% of the clean-up costs to the Railroads based on the following: (1) the Railroad parcel constituted 19.1% of the entire B & B facility; (2) the Railroad parcel was leased to B & B for 13 of the 29 years the B & B facility operated, or 45% of the time; and (3) the fraction of the hazardous products attributable to the Railroad parcel was 66%. *Id.* at 932. The multiplication of these three proportions, rounded upwards, resulted in 6% liability. *Id.* at 932-33. To account for any error, the district court assumed a 50% error rate and raised the Railroads' liability to 9%.[10] *Id.* at 932-33. The district court fixed Shell's liability at 6%, which represented the proportion of D-D spills that occurred during deliveries to the total amount of D-D spills on the facility. *Id.* at 932-33.

DTSC and EPA appealed. *Id.* Shell cross-appealed the district court's holding that it was liable under CERCLA as an "arranger." *Id.* The Railroads did not contest their liability on appeal. The panel affirmed Shell's liability under CERCLA as an "arranger" but reversed the district court's apportionment of liability, holding the Railroads and Shell jointly and severally liable for the entire clean-up cost. *Id.* at 930.

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[10] Thus, if anything, the district court was over-generous to the government in its apportionment calculations.

II.

The panel first holds the contamination on the B & B facility is theoretically capable of apportionment. *Id.* at 942. The panel reasons that some of the contamination occurred before the Railroads leased their parcel to B & B. *Id.* Further, "[o]nly some of the toxic substances were stored on the Railroads' parcel, and only some of the water on the facility washed over the Railroads' site." *Id.*

Second, the panel addresses whether the district court clearly erred in finding that the Railroads actually established a basis for apportionment. *See id.* at 942 ("[W]e review for clear error whether the defendant submitted evidence sufficient to establish a reasonable basis for the apportionment of liability."). The panel does not hold that the district court's findings are clearly erroneous. *See id.* at 943 ("[W]e do not fault the district court's factfinding ...."); *id.* at 945 ("[M]any of the district court's calculations were factually correct...."). Nevertheless, while baiting it would review for clear error whether the district court found sufficient evidence to justify apportionment, the panel switches, by characterizing the issues as *legal*, to apply *de novo* review. The panel achieves this sleight of hand by holding, without any citation of authority, that the district court's reliance on "the simplest of considerations" (i.e., "percentages of land area, time of ownership, and types of hazardous products") is "legally insufficient" to support apportionment under the Restatement's reasonable basis test. *Id.* at 942, 945.

Not so fast. Aren't these so-called "simplest of considerations" precisely the considerations the panel's amended opinion itself holds are sufficient for apportionment?: "We ... agree ... [that] divisibility may be established by volumetric, chronological, or other

types of evidence, including appropriate geographic considerations." *Id.* at 936 n. 18 (citations omitted). Percentage of land ownership (a "geographic" consideration) and period of ownership (a "chronological" consideration) provide a "reasonable basis" to apportion liability to the Railroads, which is all the Restatement, our sister circuits, and indeed the panel's amended opinion itself require. As the district court observed:

> The concept that a passive owner of a contiguous parcel, not representing more than 19% in area of a CERCLA site, operated less than 44% of the time, where substantially smaller volumes of hazardous substance releases occurred, should be strictly liable for the entire site remediation, because no other responsible party is judgment-worthy, takes strict liability beyond any rational limit.

Atchison, 2003 WL 25518047, at *87.

This evidence is not good enough for the panel. Instead, the panel requires "adequate records" detailing "the amount of leakage attributable to activities on the Railroad parcel, how that leakage traveled to and contaminated the soil and groundwater under the [B & B facility], and the cost of cleaning up that contamination."[11] Panel Op. at 944. In a feat of self-deprecating candor, the panel then admits, "records that separate out, with any precision, the amount of toxic chemicals stored on one part of a facility as opposed to another would have had little

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[11] "... cost of cleaning up that contamination."? How could B & B, Railroads, or Shell have kept such records when it was the government agencies that cleaned up the contamination, rather than the facility operator, the partial lessor, or the materials seller?

utility to B & B, the operator of the facility, and none to the Railroads, the owners of the parcel." *See id.* at 944. Even though the panel recognizes "the failure to keep these records is quite understandable," the panel nonetheless saddles the defendants with joint and several liability for lack of such records.[12] *See id.* at 944.

A.

First, the panel holds that the district court's reliance on the percentage of the B & B facility owned by the Railroads (19.1%) cannot support apportionment. *Id.* at 943-44. The panel reasons that

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[12] The panel also notes, "[w]hile it may seem unfair to hold a partial owner liable for all of the contamination cleanup costs, that perceived unfairness is the result of CERCLA's expansive statutory liability scheme." Panel Op. at 940-41. The panel is incorrect. CERCLA's "expansive" liability scheme, as the panel itself admits, is silent as to whether defendants held strictly liable under the statute are also jointly and severally liable for the entire harm, or only severally liable for the harm attributable to them. *Id.* at 934-35. As the panel correctly notes, Congress declined to mandate joint and several liability in CERCLA and intended courts to follow Restatement principles in apportioning the harm between defendants held strictly liable. *Id.*

In this case, the panel was not asked to determine whether the Defendant-Railroads were liable. Instead, the panel was charged with deciding whether the Defendant-Railroads, who were strictly liable under CERCLA, should be held jointly and severally liable for the entire cleanup cost. By conflating the establishment of liability and apportionment of liability questions, the panel disregards a basic tort principle: Strict liability is *not* mandatorily joint and several liability. Thus, the "unfairness" of holding a partial owner liable for the entire clean-up cost results, not from CERCLA's strict liability scheme, but the panel's unreasonable application of the Restatement apportionment principles to the facts of this case, affected perhaps by its confusion between strict (negligence free) liability and joint and several (apportionment free) liability.

percentage of ownership does not "provide a minimally reliable basis for tracing [the activities on the Railroad parcel to] the proportion of leakage" associated with the entire parcel because the B & B facility, including the Railroad parcel, is an inseparable facility with a "dynamic, unitary operation." *Id.* at 944.

The panel's conclusions are erroneous for two reasons. First, the panel got the law wrong: The district court's reliance on percentage of land ownership as a proper factor in apportioning damages finds support from the Restatement and our sister circuits. A comment to Restatement (Second) of Torts § 433A(1), which has been relied on by other circuits to apportion CERCLA liability[13] and which the panel itself quotes, Panel Op. at 937 n. 20, describes an analogous scenario:

> There are other kinds of harm which, while not so clearly marked out as severable into distinct parts, are still capable of division upon a reasonable and rational basis, and of fair apportionment among the causes responsible. Thus where the cattle of two or more owners trespass upon the plaintiff's land and destroy his crop, the aggregate harm is a lost crop, but it may nevertheless be apportioned among the owners of the cattle, on the basis of the number owned by each, and the reasonable assumption that the respective harm done is proportionate to that number.

Restatement (Second) of Torts § 433A(1) cmt. d.

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[13] *See, e.g., In re Bell Petroleum Servs.*, 3 F.3d 889, 903 (5th Cir.1993) (relying on this Restatement comment to reject the argument that absolute certainty is required for apportionment of CERCLA liability).

Even though it is not possible to determine the precise harm caused by each animal (e.g., one owner's cattle might have idly stood by while the rest destroyed the crops; one owner's cattle might have more heavy-footed bulls, and less light-footed heifers), the Restatement would permit apportionment because there is a reasonable basis (i.e., the number of cattle owned) to apportion liability.[14] *See Bell Petroleum Servs.*, 3 F.3d at 903. Importantly, the Restatement, unlike the panel, does not require "adequate records" of the harm caused by each animal; the farmer is not required to stand by his crop at all times and meticulously record each step taken by each animal, to trace the harm done back to the individual cattle owners.[15] Indeed, this is precisely what the "reasonable basis" standard is designed to avoid: The

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[14] The Restatement specifically contemplates the use of the cattle hypothetical in the context of pollution damages:

> Such apportionment is commonly made in cases of private nuisance, where the pollution of a stream, or flooding, or smoke or dust or noise, from different sources, has interfered with the plaintiff's use or enjoyment of his land. Thus where two or more factories independently pollute a stream, the interference with the plaintiff's use of the water may be treated as divisible in terms of degree, and may be apportioned among the owners of the factories, on the basis of evidence of the respective quantities of pollution discharged into the stream.

Restatement (Second) of Torts § 433A(1) cmt. d.

[15] Under the Restatement, the burden is on the plaintiff (i.e., the farmer) to prove each defendant was a "substantial factor" in causing a single harm. *See O'Neil v. Picillo*, 883 F.2d 176, 179 n. 4 (1st Cir.1989). Under CERCLA, our sister circuits have placed the burden of showing a reasonable basis for apportionment on the defendant. *Id.* Nevertheless, that the burden rests with the CERCLA defendant to establish a reasonable basis for apportionment, has no bearing on what the apportionment test is and what proof is required to meet that test.

whole point of Restatement § 433A is that no *specific* evidence is required for apportionment so long as the evidence and method used are "reasonable."[16] Further, the Restatement embraces "simple" considerations rejected by the panel—the number of cattle owned is a "simple," yet sufficient, basis for apportionment.

Even though it is impossible to determine the exact proportion of the contamination attributable to the Railroad parcel, the percentage of land ownership, like the number of cattle, provides one reasonable factor upon which to apportion liability under the Restatement. *See United States v. Twp. of Brighton*, 282 F.3d 915, 919-20 (6th Cir.2002) (holding that geographic divisibility may provide a basis for apportionment of CERCLA liability); *United States v. Hercules, Inc.*, 247 F.3d 706, 717-18 (8th Cir.2001) (same).

Second, the panel got its facts wrong, or more precisely, invented convenient facts. The district court's findings of fact, which the panel does not find to be clearly erroneous, contradict the panel's appellate factfinding that the B & B facility was a "dynamic, unitary operation." *See* Panel Op. at 944; *see also Amadeo v. Zant*, 486 U.S. 214, 228, 108 S.Ct. 1771, 100 L.Ed.2d 249 (1988) (rebuking the appellate court for ignoring the dictates of the clear error standard and engaging in "impermissible appellate factfinding").

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16 "Records" are not a required type of proof for apportionment under the Restatement, unlike other areas of substantive law where specific evidence is required—e.g., for conveyance of an interest in land, a memorandum in writing signed by the party to be charged is required, *see, e.g.*, Cal. Civ.Code § 1624, and treason requires the testimony of two witnesses to the same overt act, U.S. Const. art. III, § 3, cl. 1.

The panel's labeling the operations on the B & B facility as "dynamic" and "unitary" is a convenient blanket under which to hide the failure to look the facts in the face.

The facts found by the district court show quite different operations took place on the Railroad parcel:

> Relatively fewer activities that could result in releases were conducted on the Railroad parcel. Daily operations that resulted in releases of hazardous substances occurred on the B & B parcel. *Past releases at the Railroad parcel could not have contributed more than ten [percent] (10%) of the overall site contamination* given the fact that the predominant activities conducted on the [0.9 acre] Railroad parcel through the years were storage and some washing and rinsing of tanks, other receptacles, and chemical application vehicles. Mixing, formulating, loading, and unloading of ag-chemical hazardous substances, which contributed most of the liability causing releases, were predominantly carried out by B & B on the [3.8 acre] B & B parcel.

Atchison, 2003 WL 25518047, at *88 (emphasis added). The district court's findings not only undermine the panel's assertion that the B & B site was an inseparable facility with a "dynamic, unitary operation," but also provide a reasonable basis for separating the Railroad parcel from the rest of the facility to apportion liability.[17] The appendix, an

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[17] The panel contends apportionment is not possible because the district court found "B & B used the Railroad parcel as part of its total agricultural-chemical operations." Panel Op. at 944 n. 30. That is painting with a broad brush over the details; the details

overhead image of the B & B facility, tellingly shows how, as the district court found, substantially fewer contamination-causing activities were conducted on the Railroad parcel (labeled "Leased Property"), as compared to the B & B parcel (labeled "Brown & Bryant Property").

I also note the panel's original opinion held that the B & B parcel "is distinct from the portion leased from the Railroads," which further supports the district court's apportionment calculations on the basis of percentage of land ownership. *See Burlington Northern*, 502 F.3d at 801. Recognizing, no doubt, that this finding undermines its position, the panel excises this finding from its amended opinion, without explanation.

B.

Second, the panel holds that the period the Railroads leased their parcel (13 years) as compared to the entire period of contamination (29 years) is a legally insufficient basis for apportionment. Panel Op. at 944, 945. The panel reasons there is an "evidentiary vacuum" about the contamination attributable to the pre-lease period, and *no* evidence suggests contamination was constant over the entire period. *Id.* at 945.

The panel errs in concluding there is an "evidentiary vacuum" regarding the pre-lease

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give the true picture. The panel's contention merely begs the apportionment question. That B & B used the Railroad parcel as part of its operations says nothing about whether liability may be apportioned between the Railroad parcel and the B & B parcel. The answer to that question lies in the undisputed findings of the district court that different operations took place on each parcel and the contamination on the Railroad parcel could have caused no more than 10% of the overall contamination. *See Atchison*, 2003 WL 25518047, at *88.

contamination. The panel itself notes some contamination occurred *before* B & B leased the Railroad parcel. *Id.* at 942. Further, B & B implemented procedures to reduce contamination *after* it leased the Railroad parcel.[18] Thus, the district court's assumption of constant contamination over the entire period not only provides a reasonable basis to apportion liability, but, if anything, *overestimates* the contamination attributable to the Railroad parcel.

Further, the district court's reliance on period of ownership finds support from the Restatement hypothetical discussed above. Just as it is reasonable to assume that each of the cattle caused an equal amount of harm even though some of the cattle may have done no harm to the land, it is also reasonable to assume that each year of ownership caused an equal amount of contamination, even though the contamination may have been worse in some years than in others. *See also Bell Petroleum Servs.*, 3 F.3d at 903-04 (holding apportionment is possible among the sequential owners of a chrome-plating site, even though the records of the chrome-plating activities were incomplete); *Hercules*, 247 F.3d at 718 (noting apportionment is possible where "two defendants, independently operating the same plant, pollute a stream over successive periods of time" (citation omitted)). Thus, the panel also errs in rejecting

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[18] In the first twenty years of its operations (from 1960 to 1980), B & B "took almost no precaution to prevent the release of hazardous agricultural chemicals into the environment." *Atchison*, 2003 WL 25518047, at *26. At trial, a B & B executive testified that in 1980, B & B lined the sumps with concrete boxes, and in 1984, B & B built a contained area for rinsing equipment to prevent chemicals from draining to the sumps.

apportionment based on period of ownership.[19] In sum, despite two bases for apportionment of liability approved by the Restatement and our sister circuits—percentage of land ownership and period of ownership—the panel erroneously imposes joint and several liability on the Railroads for the entire clean-up cost of the B & B facility.

III.

Unlike the Railroads, Shell contested its liability on appeal. The panel holds Shell liable as an "arranger," which is defined as any person who "*arranged for disposal or treatment...* of hazardous substances *owned or possessed* by such person." 42 U.S.C. § 9607(a)(3) (emphases added). CERCLA does not define "arranged for." We have interpreted "arranged for" to rest on two alternate bases for liability: "direct" and "broader" arranger liability. *McColl*, 294 F.3d at 1054-55. The latter is at issue here because no one claims Shell directed the dumping of hazardous substances onto the B & B facility.

Under "broader" arranger liability, an entity need not have direct involvement in an arrangement for the disposal of waste; liability may be imposed if the entity had "sufficient control over the process that created the waste." *Id.* at 1055. We have no clear test for establishing broader arranger liability. *Id.* at 1055-56.

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[19] The only clear error the panel finds is the district court's exclusion of D-D from the contamination attributable to the Railroad parcel. Panel Op. at 945. The panel so holds because there was evidence that D-D leaked on the Railroad parcel and no evidence that it did not. *Id.*; *see Atchison*, 2003 WL 25518047, at *90. I do not disagree with this holding, but note that this error merely alters the proportion of liability attributable to the Railroads and perhaps may be a basis for remand. It has no impact on the ultimate conclusion that the Railroads cannot be jointly and severally liable for the entire clean-up cost.

Nevertheless, "actual control" over the hazardous substance is a "'crucial element'" of broader arranger liability, and mere "authority to control," were it actually established by the evidence, simply does not suffice. *See id.* at 1055, 1057.

The panel imposes arranger liability on Shell as a seller of the agricultural product D-D to B & B, which then contaminated its facility in part with Shell's product. The panel notes that because unintentional practices like "leaking" are included within the definition of "disposal" under CERCLA, "disposal" need not be purposeful. Panel Op. at 949. Thus, according to the panel, "an entity [like Shell] can be an arranger even if it did not intend to dispose of the product." *Id.* at 949.

The panel's statutory interpretation is unpersuasive. Even though the definition of "disposal" may include unintentional practices, mere "disposal" does not constitute *arranger* liability. Instead, arranger liability requires the defendant to have "arranged for" such *disposal* (not just arranged for the sale). This connotes an intentional action toward achieving the purpose: disposal. *See* Webster's Third New International Dictionary 120 (1993) (defining "arrange" as "to make preparations for"). It is an oxymoron for an entity *unintentionally* to make preparations for disposal.

Further, the statutory definition of "disposal" does not cover the "sale" of a hazardous substance, which was the exclusive purpose of the contract between Shell and B & B. That leakage *may* occur during the transfer of D-D from the common carrier to B & B's storage tanks cannot mean that Shell, as a seller,

arranged for such leakage.[20] By imposing arranger liability on a mere seller, the panel stretches the meaning of arranger liability beyond any cognizable limit and creates inter-circuit splits. *See, e.g., AM Int'l*, 982 F.2d at 999 ("[C]ourts ... have consistently held that the mere sale of a product is not 'arranging for disposal' under [CERCLA]."); *Fla. Power & Light Co. v. Allis Chalmers Corp.*, 893 F.2d 1313, 1317 (11th Cir.1990) ("If a party merely sells a product, without additional evidence that the transaction includes an 'arrangement' for the ultimate disposal of a hazardous substance, CERCLA liability [can]not be imposed.").

Even assuming a defendant can be held liable as an arranger for the mere sale of a product, the panel's holding is inconsistent with *McColl*, which requires actual control over the hazardous product as a crucial element of arranger liability. *See McColl*, 294 F.3d at 1055. In *McColl*, the United States was sued under CERCLA for the clean-up costs of a site contaminated with fuel. The site was used to manufacture war supplies for the United States under government contracts, and the United States was aware that waste was being produced. *Id.* at 1050-51. We held the United States could not be liable as an arranger because it did not exercise actual control over the disposal of fuel, even though it had the authority to control such disposal. *Id.* at 1057-58. The panel creates an intra-circuit conflict by reducing *McColl*'s actual control requirement from a "crucial element" for arranger liability to a mere "pertinent consideration,"

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[20] The panel's conclusion is tantamount to saying that a bartender "arranges for the disposal" of bourbon onto the bar when he sells a glass of bourbon F.O.B. patron, who, while carelessly lifting the glass, spills the bourbon.

which is "informative only in light of additional considerations." Panel Op. at 950-51.[21]

The panel holds Shell liable as an arranger because:

> (1) [D-D] [s]pills occurred *every time* the deliveries were made; (2) Shell arranged for delivery and chose the common carrier that transported its product to the Arvin site; (3) Shell changed its delivery process so as to require the use of large storage tanks, thus necessitating the transfer of large quantities of chemicals and causing leakage from corrosion of the large steel tanks; (4) Shell provided a rebate for improvements in B & B's bulk handling and safety facilities and required an inspection by a qualified engineer; (5) Shell regularly would reduce the purchase price of the D-D, in an amount the district court concluded was linked to loss from leakage; and (6) Shell distributed a manual and created a checklist of the manual requirements, to ensure that D-D tanks were being operated in accordance with Shell's safety instructions.

Id. at 950-51 (emphasis in original).

This is insufficient to establish Shell's "actual control" of the D-D transfer from the tank-trucks to B

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[21] The panel's attempt to sidestep *McColl* is inapposite. The panel notes that *McColl* viewed control as a "crucial element" of arranger liability only because the United States in that case, unlike Shell here, never owned the hazardous substances before disposal. Panel Op. at 951. Even though the panel may have wished it were otherwise, *McColl*'s holding is not so limited: "We agree with the Oil Companies and the district court that *control is a crucial element of the determination of whether a party is an arranger* under § 9607(a)(3)." *McColl*, 294 F.3d at 1055 (emphasis added).

& B's storage tanks. This evidence at best establishes Shell's *influence* over the transfer process (e.g., through rebates, the provision of manuals and checklists, etc.), which falls far short of the *actual control* required by *McColl*. Shell did not own or operate the B & B facility, nor did any Shell employees play a role in the D-D transfer. The evidence in fact establishes that Shell relinquished control over the D-D once the common carrier arrived at the B & B site and *before* the transfer of D-D.

The district court found, and the panel does not dispute, "stewardship" of D-D passed to B & B when the common carrier arrived at the B & B facility. *Atchison*, 2003 WL 25518047, at *23. The Conditions of Sale stated B & B would "furnish and maintain facilities for receiving and storing all Products delivered, which are safe, adequate and in compliance with all applicable governmental requirements and *shall unload each delivery promptly and at Buyer's own risk and expense.*" *See id.* at *68 (emphasis added). Thus, Shell did not have "actual control" over the transfer of D-D and cannot be held liable as an arranger.[22]

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[22] The panel also imposes joint and several liability on Shell, rejecting as legally insufficient the district court's apportionment calculations based on the amount of D-D spilled during the transfer process. Panel Op. at 945-48. Even assuming Shell can be held liable as a CERCLA arranger, the panel errs in holding Shell jointly and severally liable for the *entire* contamination, including contamination from products Shell did not sell to B & B.

The panel notes it does not hold Shell liable for the clean-up of the "Dinoseb hot spot," a discrete area on the east side of the B & B parcel that was contaminated by a major Dinoseb (a Dow product) spill in 1983. *See id.* at 952 & n. 35. According to the panel, this means Shell is not liable for contamination from products it did not sell. *Id.* The panel is quite incorrect. First, the

IV.

En banc rehearing was necessary because the panel's broad definition of arranger liability and its erroneous application of CERCLA apportionment principles impose CERCLA liability where Congress did not intend. The panel decision creates disorder in CERCLA jurisprudence by causing intra- and inter-circuit conflicts in an area where uniformity over the interpretation of the federal statutory law, based on commonlaw principles, is of the utmost importance.

Under the panel's CERCLA apportionment analysis, a landowner who leases a lot to an outfit that contaminates the land while going broke will be stuck with the entire clean-up bill—notwithstanding the leased lot's size compared to the overall facility at which pollution disposal occurred, the length of the lease compared to the period of the contamination, or the contamination actually attributable to the leased lot. That is, the lessor will pay all clean-up costs unless he comes up with records that show how much was spilled, where, and when—although the panel candidly acknowledges that no one could be expected to keep such records. The lessor will also pay unless he can

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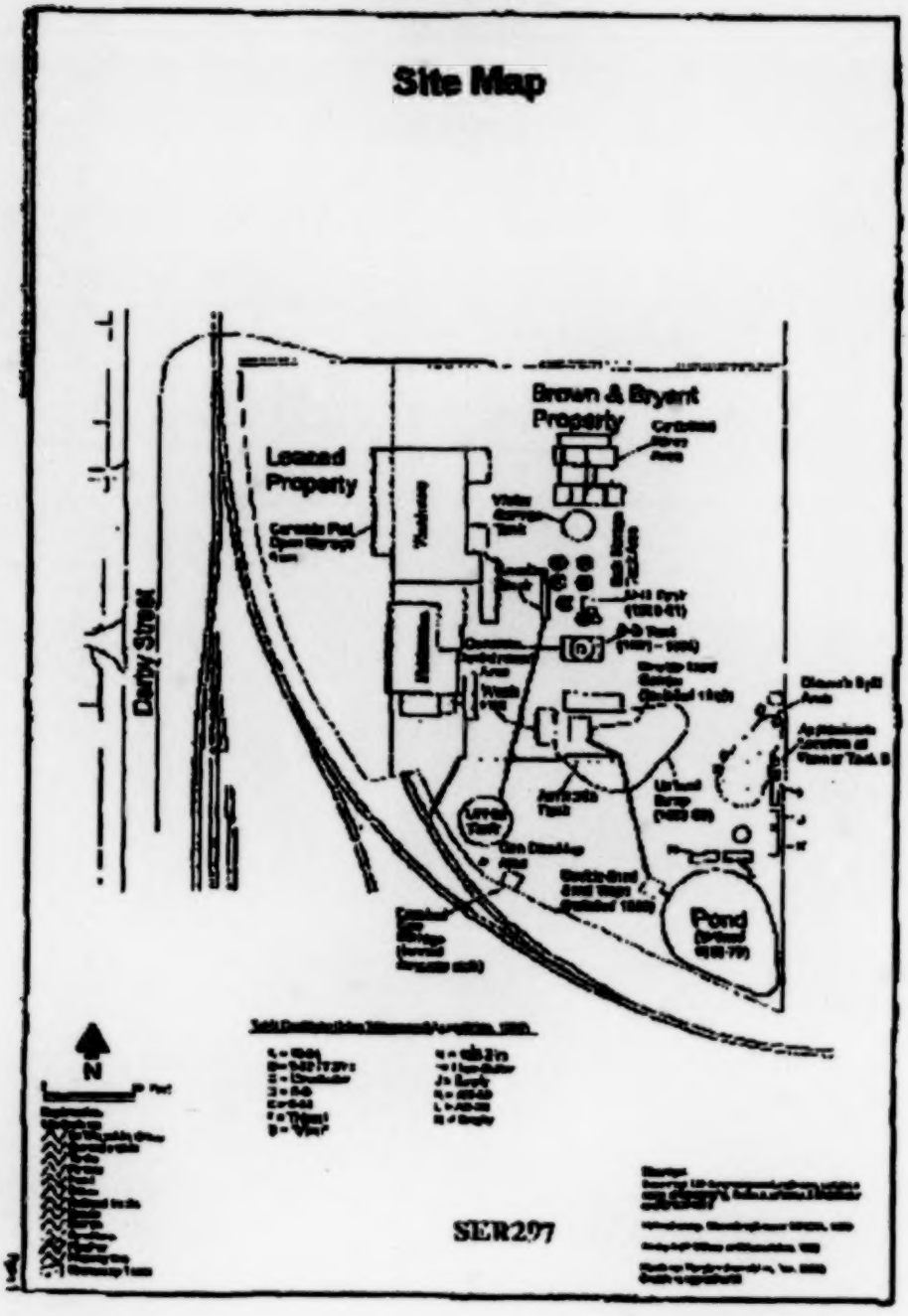
panel still holds Shell liable for Dinoseb spills outside the discrete "Dinoseb hot spot" and elsewhere on the B & B facility, even though Shell did not manufacture or sell Dinoseb. *See Atchison*, 2003 WL 25518047, at *91 ("Th[e] [EPA's] removal action [on the "Dinoseb hot spot"] was intended to remediate only the [D]inoseb that contaminated the ["Dinoseb hot spot"], not the entire site."); Panel Op. at 945-48. Second, Shell's arranger liability is premised *solely* on the D-D spills, not spills of Nemagon or Dinoseb. *See* Panel Op. at 945-51. Regardless, the panel holds Shell jointly and severally liable for the contamination resulting from all three products—Nemagon, Dinoseb, and D & D—spilled on the B & B facility. *See id.* at 945-48.

come up with records of the cleanup and the cost thereof, even if he did not do the clean-up.

Further, under the panel's novel definition of "arranger" liability, sellers of chemical products will be saddled with the entire clean-up cost of a facility contaminated in part with their products, even if they lacked control over the products spilled following the sale.

Accordingly, I respectfully dissent from the denial of rehearing en banc.

APPENDIX


Site Map
Brown & Bryant Property
Leased Property
Derby Street
Pond
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SER297

UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF CALIFORNIA

UNITED STATES of America and Department of Toxic Substances Control of the State of California, Plaintiffs,

v.

The ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY et al., Defendants.

and Related Cross-Claims and Third Party Actions.

Nos. CV-F-92-5068 OWW, CV-F-96-6226 OWW, CV-F-96-6228 OWW.

July 15, 2003.

2003 WL 25518047

AMENDED FINDINGS OF FACT AND CONCLUSIONS OF LAW Fed.R.Civ.P. 52(a)

OLIVER W. WANGER, United States District Judge.

A bench trial was held in the above entitled matter between March 3-May 14, 1999 in Fresno, California. Plaintiff United States EPA was represented by James MacAyeal, Esq., Victoria Lang, Esq. and Stephanie Johnson, Esq. Plaintiff State of California DTSC was represented by Reed Sato, Esq. Defendants Southern Pacific Transportation Co. and the Atchison, Topeka & Sante Fe Railroad Co. ("Railroads") were represented by Ike Lasater, Esq., Nance F. Becker, Esq., and Marc

A. Zeppetello, Esq. Defendant Shell Oil was represented by Randall Heldt, Esq., Michael Johnson, Esq., and David Earle, Esq. On May 24, 2002 the court issued Findings of Fact and Conclusions of Law pursuant to Fed.R.Civ.P. 52(a).

On August 22, 2002 the court issued an Order to Modify Findings of Fact and Conclusions of Law, and then on September 26, 2002 the court issued an Order amending the Findings of Fact and Conclusions of Law based on a stipulation by the parties. The parties subsequently filed various motions to amend the court's Findings of Fact and Conclusions of Law under Fed.R.Civ.P. 52(b) and 59(a). On May 28, 2003 the court issued a Memorandum Opinion and Order ruling on the parties' motions to amend the Findings of Fact and Conclusions of Law, granting in part and denying in part the parties' motions. On June 13, 2003, the court issued an errata Order on defendants' motions to amend.

The following amended findings of fact and conclusions of law are made pursuant to Fed.R.Civ.P. 52(a).

I. BACKGROUND

In 1975, Brown & Bryant, Inc. ("B & B") began leasing an acre of land adjacent to a four acre parcel it owned in order to complement its agricultural chemical distribution business in Arvin, California. The leased acre was jointly owned by the Defendant Southern Pacific Transportation Co. and the Atchison, Topeka & Sante Fe Railroad Co. B & B commenced business at the Arvin property in 1960 and ceased operations in 1989.

B & B used the leased acre ("Railroad Parcel") over the lease term to park the fertilizer and chemical spray rigs used to transport various chemicals to its

customers, until 1989. In 1983, the State of California's Department of Health Services ("DTSC") found Brown & Bryant in violation of several hazardous waste laws. A separate United States Environmental Protection Agency ("EPA") investigation found evidence of substantial soil and groundwater contamination at B & B's Arvin operations.

Pursuant to cleanup authority under the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. § 9601 et seq. (CERCLA), the EPA and DTSC incurred remediation costs. A bench trial was held before the court from March 30, 1999 to May 14, 1999. B & B is bankrupt. Its default has been entered. B & B did not appear at trial. The state and federal governments seek to recoup their costs from the Railroads and Shell. All parties submitted proposed Findings of Fact and Conclusions of Law on July 19, 1999. All parties responded to the proposed facts and conclusions by August 18, 1999. Closing arguments were held before the court on September 28, 1999.

II. PRELIMINARY MATTERS

A. *Legal Standard*

In trials without juries, Fed.R.Civ.P. 52(a) requires a court to "find the facts specially and state separately its conclusions of law thereon." *See Barnett v. Sea Land Service,* 875 F.2d 741, 744 (9th Cir. 1989).

B. *Judicial Notice*

Both the Railroads and Shell move for judicial notice of EPA responses to June 1999 Freedom of Information Act requests regarding the chemical 1, 2, 3-trichloropropane. Federal Rule of Evidence 201 provides in pertinent part:

> A judicially noticed fact must be one not subject to reasonable dispute in that it is either (1) generally

known within the territorial jurisdiction of the trial court or (2) capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned. A court shall take judicial notice if requested by a party and supplied with the necessary information.

The EPA documents sought to be judicially noticed state that EPA has concluded 1, 2, 3-trichloropropane is not a hazardous substance under CERCLA and that its listing in the Code of Federal Regulations was an error. The letters are judicially noticed as to their existence and the finding of non-hazardousness as to 1, 2, 3-trichloropropane.

III. FINDINGS OF FACT

A. *B & B's Arvin, California Operations*

1. B & B first began operating a fertilizer and agricultural chemical storage, distribution and custom ag-chemical applicator facility at 600 S. Derby Street, Arvin, California in 1960 on a leased parcel of land previously used as farmland. *See* Ex. G-1; Ex. G-2, Pre-Trial Order, March 2, 1999, Undisputed Fact 1.

2. The B & B plant ultimately came to include two parcels: (1) the original parcel leased in 1960 and later purchased by B & B in 1976 (the B & B parcel); and (2) a smaller adjoining parcel to the west of the first parcel owned jointly by The Atchison, Topeka & Santa Fe Railway (now known as the Burlington Northern and Santa Fe Railway Company) and the Southern Pacific Transportation Company (now known as the Union Pacific Transportation Company) (the "Railroads") (the Railroad parcel). See Ex. G-l; Ex. G-2.

3. The overall size of B & B's Arvin operations was 4.7 acres: the Railroad parcel is 0.9 acres and the adjoining B & B parcel is 3.8 acres. *See* Ex. G-6, at 4 (B

& B parcel is 3.8 acres); Ex. G-3, at 1 (B & B Arvin Plant is 4.7 acre site).

4. Before the 1975 lease, the Railroads and B & B entered into a 1960 rail spur agreement allowing B & B to construct and use a rail spur along the west side of the warehouse. *See* Ex. G-1; Testimony of John H. Brown at 779 ("Brown").

5. Generally, any property to the west of the warehouse is Railroad parcel. *Id.* at 778; Ex. G-28.2.

6. The exclusive purpose of the 1975 lease between the Railroads and B & B was for parking "fertilizer rigs." *See* Ex. G-19. A "fertilizer rig" is a generic term that refers to any application rig, whether for ag-chemicals, weed killer or fertilizer. Brown at 1003.

7. During the lease, the Railroads inspected the plant and knew that B & B was in the business of distributing chemicals other than fertilizers and that B & B used the leased parcel as a part of its total agricultural chemical operations. *See* Ex. G-28.1 ("Fenced open storage of farm chemicals and miscellaneous equipment. This leased area was fully used as an integral part of the adjacent farm chemical distribution facility."); Ex. G-28.2 ("active site fully used for handling & storage of farm chemicals"); Brown at 1004 (Railroads inspected property); *Id.*(B & B's logo, prominently displayed on the large UN-32 tank, stated: "Brown & Bryant Agricultural Chemicals"); J. Stuart Ondeck Dep. at 67 (Railroad inspector noted in 1978: "Fenced open storage of farm chemicals and miscellaneous equipment. This leased area is fully used as an integral part of the adjacent farm chemical distribution facility.").

B. *Site Characteristics*

8. The 4.9 acre property is located in an alluvial fan characterized by vertically heterogeneous soils including sands, silts, clays, and gravels of various porosities. Average rainfall is approximately 6 inches. ROD (Ex. 1466) at 6; Testimony of Don R. Woody ("Woody") at 393:9-24, RI/FS, Ex. 1464A, at RI-3-2.

9. The groundwater at the site is divided into three zones: 1) the upper level, or A-zone, is a perched aquifer encountered 60-80 feet below ground surface (bgs); 2) the next level, or B-zone, is encountered at approximately 150 feet bgs; the A and B aquifers are separated by a generally impervious, but leaky, clay aquitard; 3) the deepest groundwater, the C-zone, at about 200 feet bgs, is a regional confined aquifer separated from the B-zone by an impermeable layer known as the Corcoran clay. Only the C-zone is currently used as a source of drinking water. Woody, 394:17-395:8; 499:1-9; RI/FS (Ex. 1464), Fig. 3-3; Testimony of Thomas Huetteman ("Huetteman") at 668:5-8 (no planned use of B-zone for drinking water).

10. The water in the A-zone flows in a generally west/southwest direction at a rate of 53' per year. The flow direction varies at different locations under the site.

11. The nearest drinking water well is Arvin municipal well No. 1 (Arvin well), located 1700 feet southwest of the site. This well draws water exclusively from the C-zone aquifer.

12. Although there is no evidence that the C-zone is at present risk of contamination from this Site, the EPA is concerned about potential contamination of this well due to the fact that the gravel packing around the well may permit contaminated water to infiltrate from

the B-zone. No such contamination has occurred to date.

13. To the parties' knowledge, no additional domestic wells are planned in the vicinity of the site. Testimony of Robert Mandel ("Mandell") at 265:1-17; Woody, 400:1-403:8; Huetteman, 610:7-12, 615:24-617:6; Testimony of Cynthia Wetmore ("Wetmore") at 2074:1-5, 2076:8-14.

14. The B-zone flows in a southern or easterly direction, away from the Arvin well. Testimony of Dr. Daniel Stevens ("Stephens") at 3699:7-14.

C. *The Arvin Facility Stored the Chemicals D-D, Nemagon, and Dinoseb.*

15. B & B's Arvin site business sold to and applied to fields of local growers, agricultural chemical products manufactured by various companies. Brown at 755. B & B stored and distributed several Shell agricultural chemical products, including the soil fumigants D-D and Nemagon. *Id.* at 757. These products were designed to kill nematodes, which are microscopic worms that attack the roots of crops. Testimony of William Haverland ("Haverland") at 2175-76.

16. Shell D-D is a nematocide. Its dominant constituents include a combination of 1, 2-dichloropropane and cis-1, 3-dichloropropene, and trans-1, 3-dichloropropane with a small quantity of 1, 2, 3-trichloropropane. Testimony of Dr. George Deeley ("Dr. Deeley") at 2738-39, 2741-42. Shell Nemagon contains dibromochloropropane, or DBCP. *Id.* at 2748-49.

17. B & B also carried pesticide products (Vidden-D, Telone, and Telone II) manufactured by the Dow Chemical Company. B & B's in-house policy was to sell the Dow products out of B & B's Shatter, California

location. Brown at 762-63. The Dow products B & B sold out of Arvin were generally products that Shell did not make, such as dinitro (dinoseb) weed killer. *Id.* at 763.

18. D-D was available for purchase in either 55-gallon drums or in bulk tank truckloads. Ex. 1080; Haverland at 2249:9-2250:4. Prior to the mid-1960s, B & B purchased D-D in 55 gallon drums. By the mid-1960s, it purchased the D-D in bulk. Brown at 757:6-758:3.

19. D-D was manufactured at Shell's refineries in Norco, Louisiana and Deer Park, Texas and sent by railcar to storage facilities which Shell leased from GATX in San Pedro, California. Haverland at 2200:23-2202:1. When B & B wanted to purchase D-D, it would place an order with Shell's order desk located in San Ramon, California. The order center would then call the facility from which the product was being shipped in order to release it and make arrangements for shipment of the product to the customer. *Id.* at 2203:11-25. The amount of product paid for by B & B was determined by weighing the common carrier's empty truck on the way into the GATX facility to obtain the tare weight and then weighing the full truck on the way out. The tare weight is deducted from the gross weight, to reach the net weight of the product. *Id.* at 2209:24-2211:5; Ex. 1199, 3-4.

20. Shell's D-D sales to B & B for 1972 were 106,000 gallons. *1973 Marketing Agreement, Railroads' Trial Ex.* 1070, Bates No. S000266. B & B's Nemagon purchase for 1972 was 4,000 gallons. *Id.* In 1979, the D-D sales was 125,000 gallons. *1980 Marketing Agreement, Railroads' Trial Ex.* 1071, Bates No. 063502. In 1982, Shell's D-D sales to B & B were 141,000 gallons. *1983 Marketing Agreement, Railroads' Trial Ex.* 1072, Bates No. 063323. In 1983,

B & B's D-D sales were 132,340 gallons. *1984 Marketing Agreement, Railroads' Trial Ex.* 154 Bates No. 063126. Shell estimated its B & B D-D sales for 1984 were 26,000 gallons. *Id.*

21. D-D bound for the Arvin facility was shipped by common carrier trucks from the GATX facility in San Pedro. *Id.* at 2207:12-17. There is no evidence D-D was ever shipped by railcar to the Arvin facility. D-D was shipped by tank truck to the Arvin facility "FOB Destination." It was Shell's intent that B & B take responsibility for the product when it arrived at B & B's facility. *Id.* at 2207:15-2209:22, 2225:1-21; *see e.g.*, Exs. 1199, 2, 1080. Shell intended that B & B should be responsible for handling D-D after the common carrier tank truck arrived at Arvin. *See, e.g.*, Ex. 1199, Conditions of Sale, at 7, section 3.

22. Shell did not sell D-D FOB shipping point (Texas or San Pedro). No testimony was adduced that Shell ever required B & B to take control of and be responsible for all aspects of delivery from the shipping point. Shell sold D-D as a new product. It was not a waste product. Shell did not sell D-D on consignment to B & B at any time. B & B did not have to formulate D-D for use.

23. A D-D pull rig was a 500-gallon or 600-gallon tank mounted on a two-wheel trailer. Testimony of Lonnie Merryman at 11-12, 83 ("Merryman"). The D-D pull rig had 12 to 16 hollow shanks, or "tines," with hoses in each shank to pump the D-D soil fumigant into the ground. *Id.* at 12, 83. When used as a pesticide, the product is injected into the soil about 6 to 12 inches below the surface, the soil is then sealed with a drag ring roller or press wheel, and the D-D volatilizes in the soil killing nematodes. Haverland at 2175-2176.

24. Dragging a D-D rig in the field generated a great deal of dust. The D-D rigs had filters to trap sediment. Merryman at 13. The D-D pull rigs had a filter at the bottom of the D-D rig tank and a smaller three-quarter inch filter for the pump that transferred D-D to the shanks on the back of the rig. *Id.* at 13-14. Each of the 12 to 16 tubes in each shank had a small strainer. *Id.* at 12-14, 83.

25. Before taking D-D rigs to the field, B & B servicemen put on rubber gloves, opened the strainer caps and checked the filters and strainers to see if they needed to be cleaned. *Id.* at 14-18, 81-82. Checking filters resulted in spills of D-D onto the ground of one quart or less. *Id.* at 16, 81; Brown at 1005.

26. D-D rigs were parked on the Railroad parcel. *Id.* at 15-16, 81, 113-14; Brown at 1003. Filters were checked 20 times a month, at least. Merryman at 113.

27. D-D rigs were used all year, but mostly in the summer. *Id.* at 15, 114.

28. The D-D rigs were not usually washed out unless they became full of sediment. *Id.* at 14, 16, 110.

29. No Shell employee ever directed or assisted the washing out of the D-D rigs. Id. at 110.

30. D-D rigs had a plastic or "corlon" sight gauge tube on the end of the tank. *Id.* at 14-15; Brown at 822. The D-D tank and the sight gauge were connected so that if the tank were half full, the sight gauge would read half full. Merryman at 15.

31. Exposure to sunlight made these tubes brittle. Brown at 822; Ex. 1123, at Bates No. S003566 (Shell technical bulletin: "sight tube, (a poor but acceptable alternate) ... Tube material must not be attacked by tank contents or the natural environment (sunlight).").

32. Sight gauges regularly broke. A hard wind would cause breakage of brittle gauges. When this

occurred the contents of a half-filled tank would slowly spill on the ground through the sight gauge. Merryman at 104; Brown at 823. B & B was not always "quick enough to replace" sight gauges and "would lose material." Brown at 822.

D. *D-D Spills Occurred from D-D Nurse Tanks*

33. Nurse tanks were four-wheeled mobile tanks that were generally of two sizes: 2, 000 and 2, 600 gallons. Merryman at 9, 69. Nurse tanks were stationed at the grower's field to receive liquid product from B & B's tank truck into either kit tanks mounted on tractors or into tanks on a pull rig. *Id.* at 9; Brown at 841. B & B would move the nurse tank from one farmer's field to another. *Id.* at 69.

34. B & B's employees rinsed out nurse tanks at the wash rack on the B & B parcel unless the nurse tank was going back out to another job the next day with the same material. *Id.* at 16-17, 80. If the nurse tanks were going to be idle, they would be washed out and parked on the Railroad parcel. Sometimes too many nurse tanks were lined up for washing, so the D-D nurse tanks were parked west of the warehouse on the Railroad parcel. *Id.* at 16-17.

35. The D-D nurse tanks also had filters at the bottom of the tank that had to be checked prior to use. *Id.* at 17, 80, 82. The process of checking nurse tank filters sometimes caused spills of less than a gallon of D-D rinsate. *Id.* at 17, 81-82. Sometimes a pint or a quart of D-D spilled. *Id.* at 81.

36. The servicemen preferred to check the filters near the wash rack due to the effect D-D could have on the employees' skin. Merryman at 82-83.

37. Nurse tanks also had sight gauges that broke from time to time. *Id.* at 112.

E. *Spillage and Transfers to D-D Bobtails During Downloading Occurred All Over the Arvin Site After a Windstorm Destroyed the Bulk Storage Tank*

38. A "bobtail" is a two-ton truck with a 1, 800 to 2, 000 gallon tank mounted on the truck. Merryman at 9-10. The bobtail was used to transport fertilizer or D-D over the roads to nurse tanks. *Id.* at 9, 19, 69.

39. The transfer of liquid material by B & B employees from bulk storage tanks located on the B & B parcel to bobtails commonly resulted in leaks and spills to the ground on a daily basis, wherever transfer took place. *Id.* at 34-37.

40. Sometimes 5-gallon buckets would be used to catch material-not just D-D-when hoses were being unhooked from tanks. The collected material would be put back in the tank. Merryman at 36.

41. In 1978, the bulk D-D storage tank used to store Shell D-D was destroyed in a windstorm. B & B then used converted stainless steel milk trailers to store bulk D-D. Merryman at 19-21, 61; Brown at 794-95, 798-99. These temporary tanks were kept all over the Arvin site, including the area west of the warehouse-the bobtails would download material from the tanks. Merryman at 19-21.

F. *Dinoseb Was Stored on the Railroad Parcel*

42. B & B stored containers of Weed Killer D (dinoseb) in 55-gallon drums and 5 gallon cans on a concrete apron along the warehouse wall on the Railroad parcel. Merryman at 31-32. B & B stored the Weed Killer D outside because if the drums and cans leaked, it was "real messy." *Id.* at 31-32, 101. Moreover, B & B did not store Weed Killer D in the warehouse because it was a low cost product "that

nobody ... would steal." By contrast Nemagon was stored in the warehouse. *Id.* at 32.

43. B & B used a hose to wash off the apron when the dinoseb leaked. Dinoseb washed on to the ground. *Id.* at 32-33; *see also* Mandel at 263-64; Woody at 337, 441.

G. *The Warehouse Occasionally Was Washed Out*

44. Cans of products more valuable than dinoseb, such as Nemagon, Fumazone and Round-Up, were stored inside the warehouse. Merryman at 33-34. Before occasional company barbecues, B & B employees emptied the warehouse, swept the concrete floor and hosed it out, washing the water out of all three doors of the warehouse, including the doors that were on the west side of the warehouse. *Id.* The rinsate was washed onto the ground.

H. *Empty Cans were Stored on Railroad Parcel.*

45. B & B retrieved used cans of pesticide products from growers' fields and stored the used, unrinsed cans for as long as a year before crushing them and sending them to a landfill. Brown at 829; Merryman at 113.

46. B & B stored used 55 gallon drums of dinoseb on the Railroad parcel. *Id.* at 31.

47. Every two or three months the cans would be collected and crushed. Crushing the cans near the UN-32 tank on the B & B parcel caused residual liquid to spill on the ground. Merryman at 62-65. The wet areas were two to three inches deep and as much as six feet across. *Id.* at 100.

48. Weed Killer-D (dinoseb) has a particular dark yellow-orange color when it makes contact with the ground. Merryman at 74.

49. Mr. Merryman, a B & B employee from 1972 to 1981, testified that there were always "small leaks." *Id.* at 75.

50. Shell Nemagon, which contained DBCP, came to the Arvin plant in 30-gallon drums and 5-gallon drums. *Id.* at 28. After the 30-gallon Nemagon drums were emptied, they were stored on the Railroad parcel. *Id.* at 28-29. Residual contents of used Nemagon containers leaked onto the ground. *Id.* at 97-99.

51. Nemagon also came in 5-gallon cans. *Id.* at 29. After the 5-gallon cans were emptied, the cans would be brought back in the yard and stored at the can storage area marked as "D" on Exhibit G-100. *Id.* at 29-30. The 5 gallon empty cans were transferred to the Railroad parcel, where the empty 30-gallon Nemagon drums were stored, because the small can storage area became flooded when it rained. *Id.* at 30.

I. *Interaction between Run-off from the Railroad Parcel and the B & B Pond*

52. The B & B parcel was graded towards the southeast waste pond (pond). Merryman at 25, 45-46, 79, 92-93, 112; Brown at 779-80; Testimony of Gary J. Leary ("Leary") at 1833. Brown testified that a small pipe under the railroad spur tracks allowed the water on the Railroad parcel to drain to the pond. Brown at 779-80. Although there was a small berm around the pond before it was lined in 1979, a 12-inch pipe buried in the ground allowed water from the low area near the pond to drain into the pond. Merryman at 93.

53. When the sump near the B & B wash rack was lined in 1979, B & B installed a pipe to connect the sump to a lined sediment sump near the pond. Merryman at 25-27. B & B also connected this sediment sump to the pond, which was then lined. *Id.* Mr. Merryman testified that the purpose of the pond

prior to 1980 was simply to collect rainwater runoff from the entire plant. *Id.* at 777-78. EPA documentation, its consultant, and another B & B employee suggest the pond was in fact connected to the sump as early as 1960. (Canonie Environmental Closure Plan-Arvin Facility [Ex. G-9, Vol. 2, AR0011, 5]; Dickey Depo., Ex. 3051, 40:10-21. Mr. Dickey worked at Arvin from 1970-77. Dickey Dep., 9:2-19.

54. The B & B plant was oiled with a dust binder, except for areas near concrete or the gravel under the tank farm. Merryman at 22-23, 78-80,; Brown at 780; Leary at 1832-34, 1859-60.

55. The oiled surface developed cracks and flaws and showed exposed dirt. Merryman at 22-23; Leary at 1834.

J. *[Stricken]*

56. That a release of a hazardous substance occurs at the surface of the property does not per se establish that the substance reached the subterranean groundwater. See Testimony of Dr. Gary Chirlin ("Chirlin") at 1722:7-11, 1755:2-24.

57. To confirm a surface release migrated to groundwater requires: (1) sampling results showing a vertical trail of contamination from the surface to the groundwater, and (2) increased concentrations of contamination in the groundwater below and downgradient of the release point. Chirlin, 1678:17-1679:14.

58. Such a combination of factors is present on the B & B parcel. Dr. Chirlin did not observe it on the Railroad parcel. He found no evidence of an independent plume of groundwater contamination caused by surface releases on the Railroad parcel. Chirlin at 1680:16-1682:13, 1685:5-16; Chirlin Dep. at 70:11-71:14; Stephens at 3658:12-25, 3660:13-3661:1 (no

continuous columns); 3701:4-11 (the groundwater data does not suggest a source on the Railroad parcel).

59. The remedial goal for the A-zone groundwater was 10-100 times the applicable Maximum Contaminant Levels (MCLs) the EPA sets for 1,2-DCP and the DTSC sets for chloroform, DBCP, 1,2-DCP, dinoseb, and EDB. The theory behind this goal was that," at this level, you could leave the A-zone alone and you could let natural processes occur and it would not continue to impact the B-zone in a negative way." ROD, Ex. 1466, 12; Huetteman at 574:13-575:15.

60. The levels of contamination reported in the A-zone groundwater beneath the Railroad parcel above gridline 14 on Ex. 687, above well WA-03, are too low to require remediation. Huetteman 633:2-634:2; Stephens at 3960:6-3966:6. Even if hazardous substances were released in this area, they will not cause or contribute to the Governments' incurrence of response costs. *See* Huetteman at 634:23-637:12 (he did not evaluate whether any Railroad parcell spills impacted groundwater); Walton at 35:23-36:23, 38:12-18 (his model is intended to show a range of possibilities of a spill being followed by a runoff-producing rainfall event; it does not show the probability that a spill will reach the groundwater); 115:18-21, 116:17-117:8, 132:18-25, 183:10-23; 4118:22-4119:5 (he did not quantify the amount of any spill that theoretically could have reached the pond as runoff); Chirlin at 1583:1-20; 1671:4-10, 1672:2-11; 1692:11-18; 1716:2-19, 1717:2-13; 1718:4-11 (Dr. Chirlin has no opinion whether the releases he assumed occurred on the Railroad parcel reached groundwater in sufficient quantities to cause the concentration in the groundwater to exceed EPA's remediation goal of 10 times the MCLs).

61. The parties agree that the most important variable affecting the downward migration of any

chemical substance released at the Arvin Site ground surface is the amount of water. Walton at 86:19-87:7; 88:5-9; Chirlin at 1747:15-25 (regardless of whether we are talking about surface runoff or downward migration, the flow of water containing dissolved chemicals is the source of groundwater contamination at Arvin); ROD, Ex. 1466, at 9.

62. Other factors affecting contaminant transport include: the wind and temperature (higher temperature and wind increase the rate of evaporation); the porosity of the soil; the amount of organic carbon in the soil; and the molecular weight and chemical properties of the particular contaminant.

63. When a material is spilled on the soil, a dynamic process occurs whereby some of the material volatilizes or evaporates into the air, and some of it enters the soil. Materials absorbed into the soil will continue to volatilize and, if water is present, will dissolve, evaporate and move with the water. If sufficient water is present, chemical material will move downward until it reaches a "residual saturation level," at which the material is static. Deeley at 2769:14-2773:12; 2795:13-2796:8; Stephens at 3762:5-22.

64. Evaporation from shallower soils alters the concentration gradient, which draws materials up from deeper soils. This is particularly pronounced beneath asphalt paving, which heats up more than the air and draws moisture out of the upper soil profile. This phenomenon is known as barometric pumping. Stephens at 3628:14-3631:23; Deeley at 2778:25-2779:23, 2782:6-18.

65. In the absence of added water, a spill of at least 500 gallons (on bare soil) or in excess of 10,000 gallons (on intact asphalt) of a volatile chemical such as 1,2-DCP would be required on the Railroad parcel, before

a spill would reach groundwater in concentrations sufficient to require a remedial response. Stephens at 3681:5-3686:5; *See* Walton at 86:2-4 ("If you don't have water with the spill and you don't have preferential pathways, it [1,2-DCP or D-D] tends to evaporate and it takes a great big large spill to remotely reach the groundwater."). There is no evidence that a single spill of that magnitude ever occurred on the Railroad parcel. Memo. & Order re Shell motion for summary judgment, 3/19/99 ("Shell Memo. & Order"), undisputed factual finding 18.

66. According to the Governments, dinoseb and D-D contaminated the Site and moved down to the groundwater through focused infiltration. Dinoseb and DCP (a major D-D constituent) were transported to the groundwater by water. Walton at 75. Assuming the precipitation at Bakersfield is similar to the precipitation at the Arvin Site, there was sufficient water at the Site to dissolve organic liquid spills. *Id.* at 32, 75.

67. Dinoseb has moderate solubility and if there is no water movement, dinoseb will not tend to move to the groundwater table. *Id.* at 74. If a dinoseb spill is small and water is present, most or all of it would dissolve in water and be transported towards the groundwater. For large dinoseb spills, a portion of the spill would dissolve in water and infiltrate down into the groundwater. *Id.* at 77. The rest of the dinoseb would remain at the surface and in the shallow subsurface. *Id.* Dinoseb is present near the surface of both the Railroad parcel and the B & B parcel. *Id.* at 82. Residual dinoseb remaining on or near the surface provides a signature of locations where dinoseb infiltrated towards the groundwater through the vadose zone. *Id.*

68. A new spill of D-D has a vapor pressure approximately twice that of water and evaporates twice as fast as water. *Id.* at 80.D-D is composed of both DCP and TCP. When a D-D spill evaporates, the DCP evaporate more quickly than the TCP. *Id.* As the spill gets smaller, its vapor pressure decreases and becomes one eighth the water evaporation rate. *Id.* Initially, TCP is a minor constituent of D-D because it is not as volatile as DCP. *Id.* D-D had a higher composition of DCP than TCP because as a soil fumigant, it was designed to rapidly diffuse through soil to kill nematodes. *Id.* at 81. TCP was a minor constituent but as the spills evolved, TCP remained. This made TCP seem like a major constituent of D-D. *Id.*

69. D-D and DCP are very soluble in water. If there is regular water movement, DCP dissolves in water and is transported by water towards the water table. *Id.* at 75. DCP tends to readily dissolve unless there is a large spill. *Id.* at 77. DCP also has a high vapor pressure and a high Henry's law constant, which is a measure of the portion of a dissolved substance that will partition into the air. *Id.* at 78; Deeley, at 2765:10-2766:4. When DCP infiltrates the ground, it moves through the soil by molecular diffusion. Walton at 78. As a result of molecular diffusion, DCP moves in all directions, although gravity exerts a small influence on the process. *Id.* Some DCP moves with the water and some of it partitions from the aqueous phase into the "soil air," i.e. the pockets of air between the soil grains. *Id.* The residual DCP that remains in the soil air may repartition back into the aqueous phase when additional water falls on the surface. *Id.* Because of molecular diffusion, DCP does not have a signature unless a large amount of non-aqueous phase liquid

(NAPL) is deposited and remains on the surface, as might be the case at the sump. *Id.* at 79.

70. Focused infiltration occurs where there are flaws and cracks in an oiled ground surface, water puddles and the contaminant is transported by water down towards the groundwater. *Id.* at 77, 84, 88. Chemicals can infiltrate a crack because water flows through the crack by gravity. *Id.* at 88. When a contaminant such as DCP enters a crack or flaw, the contaminant moves in random directions through molecular diffusion. *Id.* at 89. Once DCP is below the ground, its evaporation process is slower because DCP can move towards the surface only by moving upwards though sand and soil grains, through molecular diffusion. *Id.* at 88. Once a spill has infiltrated beneath the surface, it is retained for a much longer period of time; another rain storm comes, it introduces more water and moves the contaminant further down underground. *Id.* The infiltration process occurs over a series of storm events, whereby rain water, during the course of weeks and months, pushes the contaminant deeper down in the subsurface. *Id.*

71. The Governments have not identified any specific areas on the Railroad parcel where focused infiltration has actually occurred. Although rain water did puddle in the swale on the southern end of the Railroad parcel, the sampling results do not reveal soil contamination beneath the swale. There are no other depressions on the Railroad parcel where more water might have collected. Stephens at 3617:13-21, 3618:18-3620:23, 3651:9-3653:12.

72. Even if cracks or other flaws, which might serve as entry points for focused infiltration, are assumed to exist on the Railroad parcel, and even if it is assumed that small spills of pesticide products may have made their way into such cracks, those

circumstances do not establish that chemicals of concern migrated 70 feet downward to the groundwater. (For example, most of the dinoseb detections were at 15-20 feet bgs. Woody at 491:9-10). A crack in the ground level surface provides a preferential pathway for evaporation out, as well as infiltration. Because the Railroad parcel was oiled, the temperature in a crack was higher than would otherwise be the case, facilitating such evaporation. There is no evidence of deep cracks, large spills or spills followed by heavy rainfall which might be sufficient to overcome those evaporative forces. Deeley at 2852:10-2853:11; Stephens at 3628:14-3631:23.

73. The Governments' alternate theory of groundwater contamination is that surface runoff of water containing dissolved chemicals may have migrated from the Railroad parcel to B & B's waste pond. A substantial dispute remains whether rainfall at Arvin is sufficient to generate the quantity of runoff that would have been necessary for such transport to occur. Chemical releases on the Railroad parcel have not been matched with significant rainfall events. Stephens at 3594:15-3597:13; Deeley at 2769:14-2773:12, 2781:6-18, 2857:2-2858:4 (describing physical processes necessary to cause a spill to be dissolved and transported with runoff).

K. *No Continuous Columns of Contamination under Railroad Parcel*

74. The levels of chemical contamination on and under B & B Parcel are substantially higher than any of the reported detections on and under the Railroad parcel; the overwhelming contaminant mass is on and under the B & B parcel. Kalinowski at 3489:15-19, 3496:15-22; Stephens at 3659:11-3660:12.

75. The vadose zone concentrations are most consistent with sources, which existed at the same location over long periods of time, and are inconsistent with soil contamination caused by occasional releases at scattered locations, as are alleged to have occurred on the Railroad parcel. Stephens at 3639:14-3641:3.

76. While many of the sample borings on the B & B parcel show contaminants present throughout the soil column, from near the surface to the groundwater, the Railroad parcel borings do not show continuous columns of contamination. This data gap raises question whether hazardous substances released on the Railroad parcel migrated down to the groundwater. Stephens at 3658:12-25, 3660:13-3661:1; Chirlin at 1680:16-1682:13, 1685:5-16.

77. The Governments contend that Ecology and Environment, Inc.'s (E & E) soil Boring O and Kennedy/Jenks Boring CA-20 represent continuous columns of contamination to groundwater under the Railroad parcel. The Railroads dispute the validity of this sampling data. Even assuming the data is valid, the contamination level is below the remediation threshold. No expert has testified it impacted the groundwater. Stephens at 3803:22-24(O); 3958:23-3960:5 (CA-20).

78. The size and shape of the groundwater plumes indicate the absence of identifiable sources of measurable hazardous release contributions from the Railroad parcel to the mass of chemicals present in the groundwater. Kalinowski at 3530:21-3531:4.

79. The combination of groundwater flow and mounding is sufficient to have carried contaminants of concern in the A-zone from B & B's sump to the groundwater under the Railroad parcel, and is the most likely explanation for the groundwater plume found

there. Stephens at 3671:3-7, 3678:25-3679:8, 3700:15-3701:3. In particular, groundwater "mounding" caused by the high input of contaminated water from the B & B unlined waste pond and sump, and to a lesser extent from pooling of water outside the pond berm on the B & B parcel, coupled with the flow of irrigation tail waters from the fields to the east of the Site, caused a radial flow of water from those locations, biased in the direction of the downgradient slope of the water table to the southwest. This mounding had the effect of pushing the groundwater in a more westerly and northerly location than would otherwise be the case. Stephens at 3671:12-3679:8, 3981:18-3990:2; Exs. 97.3, 97.4, (pooling outside pond berm); Stephens Fig. 24-35 (water elevation maps); Ex. 1027 (irrigation).

80. Dr. Stephens' plume maps and E & E's plume maps (RI/FS Fig. 4.7, 4.8, 4.9) are substantially similar; none of them show concentration bulges under the Railroad parcel. Stephens at 3960:6-20.

81. It is undisputed that the pond, the sump, and the dinoseb spill area, all of which are located on the B & B parcel, were and are the primary sources of the groundwater contamination at the Site. ROD at page 7 states: "The distribution of contaminants was consistent with the locations of the major source areas and follows a pattern consistent with the flow of contaminants in the A-zone." Ms. Wetmore confirmed that the statement was accurate at the time it was written, and is still accurate now. Wetmore at 2093:18-2094:5. *See* Walton at 18:8-19:17, 75:3-16 (waste pond is largest source of "focused infiltration" on the site); 115:22-116:6; Chirlin at 1791:20-24; Deeley, 2842:10-16 (sump and pond provided a "direct conduit" to the groundwater) Kalinowski at 3489:15-19, 3496:15-22 (over 99% of the dissolved and adsorbed chemical mass

in the A-zone is in the area of the B & B sump and pond).

82. Whereas D-D and similar volatile organic chemicals will rapidly volatilize and "fume" when injected into the soil, or are spilled onto the ground, the pure phase D-D which was rinsed into the sump could not readily volatilize due to the pressure of the water overlying it.

83. Because dense non-aqueous phase liquids (DNAPLs) are by definition heavier than water, the pure phase D-D sank down into the groundwater. In contrast, with respect to the types and duration of releases which may have occurred on the Railroad parcel," the soils underneath there never really had an opportunity to wet up, to create a head that would drive those constituents downward." Stephens at 3692:4-3694:14.

84. The relative concentrations of 1,2,3-TCP, 1,2-DCP and 1,3-DCP in the groundwater beneath the northwestern portion of the Railroad parcel support the Railroads' contention that those chemicals traveled from beneath the sump and pond in the groundwater, and did not directly result from releases of D-D on the Railroad parcel. This is because in the event of a surface spill, the 1,3-DCP would evaporate and disappear very quickly, then the 1,2-DCP would evaporate, and then the 1,2,3-TCP-which comprised only about 5% of D-D. The reported presence of all three of those chemicals in the groundwater is evidence that they migrated there through a non-evaporative process, such as being underwater in a sump or pond. Smith at 2663:8-2672:3; Ex. 3019A.

85. The Kennedy/Jenks data for CA-20 (soil borings) are unreliable for the purpose of determining whether hazardous substances were released at that

location. Smith at 2643:5-2652:5 (reported findings of 1,2-DCP and EDB in CA-20 are invalid because the GC was misinterpreted by the lab; the reported finding of 1,2,3-TCP at 37 ppb is a transcription error); Stephens at 2980:13-3982:11; 3985:22-3986:1.

L. *Sampling Results on Railroad Parcel*

86. The FASP testing lab was set up to provide quick turn-around of sampling data. Laboratory protocol was developed primarily to determine whether a chemical of concern was present and whether further investigation or remedial action was necessary, not to quantify the amount of each chemical that was present. Ex. 10W; Mandel at 271:1-14; 275:15-24; 382:9-22; 319:19-25.

87. Applicable OSWER guidelines distinguish between field data, which is generally not suitable for enforcement purposes, and enforcement data generated by labs approved under EPA's Contract Laboratory Program (CLP). Huetteman at 591:11-24 (acknowledging this distinction), but see 592:7-12 (opining that those particular rules were no longer used in the 1990s); Smith at 1078:13-14 (FASP data not intended as a replacement for CLP data).

88. The FASP laboratory protocol was not intended to and did not meet the reliability standards required of CLP labs. FASP Field Operations Work Plan (Ex. 1399), App. B p. 1-1; Mandel, 371:25-372:16; Ex. 10W (the FASP QA/QC plan "is not intended to be equivalent to a CLP plan"), discussed by Mandel at 377:8-378:17; Huetteman at 601:16-20, 602:10-603:6. Unlike a CLP lab, the FASP lab was never audited or certified by any independent party; it did not run "check standards"; it did not maintain the level of documentation of performance required of a CLP lab; and it did not double-check its standards for possible

contamination. Yerian at 1169:1-1170:18; Smith at 2541:16-2542:10.

89. The FASP lab data was not intended to be used for enforcement purposes. Mandel at 375:10-15; Huetteman at 600:24-601:2; FASP QA/QC plan (TAT Report, [Ex. 1034], App. M, EPA 202500). At the time the FASP protocol was selected, the responsible EPA employees were not aware that the Railroads were PRPs, and they were not concerned about whether the data was suitable for enforcement purposes. Mandel at 266:10-267:21; Huetteman at 642:6-23, 645:5-11.

90. The analytical method used by the FASP lab at Arvin was unique to that project. It was not a standard EPA method which had been tested and verified over time, but was created by Dr. Yerian in the same week she was organizing the lab, the equipment, and the people she needed and making arrangements to move them down to Arvin from Seattle. Yerian at 1170:19-1171:14. The analytical method was originally designed to achieve a two-hour turnaround, but was modified to a one-day turnaround. Yerian at 1033:20-1036:25.

91. Dr. Yerian's objective was to provide analytical data in a timely manner to assist in the site assessment. Yerian at 1131:8-14. The focus of the assessment was to identify high concentration source areas, and to ensure that samples reported "non-detect" were accurate; the procedures were not designed to maximize confidence in the accuracy of low concentration hits. Yerian at 1216:3-16.

92. All of the sampling data reported by the FASP lab is identified by an "f" qualifier, indicating that different quality control and data validation procedures were applied to those samples. This means that analytes were to be assumed to be tentatively

identified, and concentrations were to be treated as estimates. FASP Field Operations Work Plan (Ex. 1399), 1. *See* Yerian at 1132:12-19, 1077:24-1078:1 (FASP lab data was "always evaluated as estimated data"); Smith at 2596:14-2597:6. That "analytes are tentatively identified" means that the chemicals have been tentatively identified based on their retention time in the gas chromatograph, but they have not been confirmed by using a gas chromatograph (GC) with another column on it, or by a mass spectrometer (MS). Smith at 2596:14-2597:6.

93. The FASP lab analyzed the Arvin samples exclusively using a GC. The GC operated generally as follows: The chemist screwed a small vial containing a soil sample onto the GC; the volatile organic compounds ("VOC") were "purged" out of the samples by bubbling helium gas through the soil; the VOCs passed over and were absorbed onto a "trap;" the trap was heated; the compounds exited the trap and passed through a column; the chemicals adhered to the coating on the column to different degrees, and passed out or "eluted" from the column at different rates; a detector detected the time at which a compound passed through it; and a computer hooked up to the detector printed out a chromatogram which depicted the elution times. Smith at 2500:2-17, 2504:3-2505:11; Yerian at 1139:10-18, 1044:4-1047:16. The amount of the particular material which had passed through the detector was determined by the area under each compound's chromatogram "peak." Smith at 2500:5-2502:22.

94. A GC does not identify the compounds being tested by their chemical composition, but rather reports the elution, or retention, times of the analytes. A mass spectrometer, in contrast, is able to identify unknown chemical compounds. Therefore, CLP protocol calls for either (1) a confirmation column to be

run on another GC, or (2) a GC/MS to validate all positive results identified on the primary column of a GC. Smith at 2630:22-25. The FASP lab did not have a mass spectrometer at Arvin. Yerian at 1082:24-1083:12; *see* Huetteman at 594:3-20, 596:18-597:5 (lack of MS is the primary difference between the mobile FASP lab equipment and a CLP lab's equipment).

95. "Dual column confirmation" is a process by which samples to be confirmed are run through a second GC in which the elution times of the compounds have been reordered. Smith at 2505:1-2506:17; 2599:5-13 (a dual column is necessary in order to confirm which of a number of chlorinated or brominated compounds with similar retention times you have identified). The FASP lab had two GC's-a Shimadzu GC (the "low-GC") and a Varian GC (the "high-GC"), Yerian at 1062:15-17, 1133:5-17, 1138:7-8]-but the target analytes eluted in the same order because the FASP lab used the same column and the same program. Smith at 2598:16-18. Thus, the FASP lab could not do dual column confirmation. Smith at 2598:19-2599:4. Dual column confirmation was used by Southwest Lab of Oklahoma for their analysis of the dinoseb samples from Arvin.

96. Comparison of the FASP data to the outside lab results for the 10% of FASP samples that were sent off-site for confirmation reveals significant differences between the field and the permanent lab results, especially as to the low levels of 1,2,3-TCP. According to a comparison made by EPA's Dr. Yerian and Bob Mandel, 25% of the time the FASP lab did not identify the same target analyte as the confirmation lab, and only 46% of the time did the labs agree with regard to non-detect findings. Ex. Y-45; Yerian at 1173:16-1174:11, 1245:18-1246:9.

97. The samples analyzed at the FASP lab could have become contaminated in at least two ways: from airborne contaminants released during the TAT team's drilling operations, and from sample handling.

a) *Drilling operations.* The GCs were set up next to each other in the Region X mobile lab, which was located in the warehouse on the B & B parcel. Yerian at 1137:25-1138:8, 1167:21-24. Injections into the GCs began on February 27, 1990, when drilling activities were still going on. Yerian at 1137:20-24; App. A to RI (Ex. 1464B), A-1 (borings were completed between 2/27/90 and 4/16/90). The drilling surrounding the warehouse liberated volatile organic compounds and created airborne contamination. Memo. and Order of 3/19/99, undisputed factual finding 32 ("Many of the hazardous substances present at the site had a tendency to volatilize when disturbed by drilling activity"); Mandel at 366:14-368:4; 369:19-370:6. Air was vented out of the lab to protect those working in it from contamination and drawn back in from outside, but there is no evidence that the FASP lab had an air filtration system. Woody at 467:14-468:12; Yerian at 1207:18-1208:4-23.

b) *Sample manipulation.* The FASP lab was working with unusually small (half gram) soil samples. Yerian at 1114:24-1116:11. Collection of soil samples in the hot zone while wearing Level B protection was a difficult process, and a likely source of soil particles getting stuck under the rims of the vials. Smith at 2463:5-2463:19, 2457:7-13; Woody at 457:25-460:13. Also, one of the FASP lab chemists noted in the logbook on March 4, 1990 that some of the vials "would not seal due to deformities on the rims" Yerian at 1199:7-12, Ex. 3-Y, and on March 2 that," slight imperfections in the vial rims cause leakage of VOCs ..." Smith at 2569:23-2570:2. Because changes in

temperature cause the air within sample vials to expand and contract, soil particles under vial rims or deformed rims can permit VOCs to enter and exit the vials. Smith at 2461:8-2463:4, 2547:25-2548:6; Yerian at 1199:13-1200:9 (without a good seal, vials can leak and contaminate other samples). TCP released from a vial could diffuse through the plastic bags in which the vials were kept, and contaminate the air in the lab. Smith at 2550:13-2551:10. As Dr. Smith summarized it," so little in the atmosphere can give you trouble just by screwing [the cap] off. Parts per billion is not easy to do, and under FASP lab conditions, I'm sure it is difficult to do." Smith at 2538:22-2539:1. Overall, reliability of FASP sampling data is subject to some question, approaching a range of plus-minus forty percent for some samples.

M. *The Amount of Contaminants that Entered the Sump Cannot be Estimated.*

98. B & B washed out bobtails and nurse tanks at an unlined sump on the B & B parcel from the early 1960s until the sump was lined in 1979. Merryman at 69. If a truck had to change over to a different fertilizer or chemical, the truck would be weighed, pumped clean and washed out at the wash rack. *Id.* at 69-70. B & B employees attempted to pump out all the residual material before rinsing, but bobtails probably had between 5 and 10 gallons remaining. *Id.* at 71.

99. Before rinsing the tank, however, the employee would open a valve to let the material drain onto a concrete pad. *Id.* at 70-71. This would cause some D-D to diffuse into the atmosphere before the rinse water followed, washing the material into the sump. *See* Walton at 88.

100. If the driver was not able to place the bobtail on top of the wash pad, the material would drain off the

other way into the yard. Merryman at 71. During the busy D-D season when tankers continually hauled load after load of D-D, the tanks were not washed, but were sent back out to the fields. *Id.* at 69. Nonetheless, residual D-D would be washed out of these tanks at least once a day at the end of every day and sometimes more often each day. *Id.* at 72.

101. The sump, however, did not percolate well because it became clogged with sand fines. Walton at 4056; Merryman at 50, 55. The water in the sump and the contaminants also evaporated. Walton at 4053-57. Therefore, the exact amount of contamination that entered the subsurface at the sump cannot be calculated.

N. *The Contamination from Each Parcel Cannot be Exactly Quantified*

102. There is no basis to determine the source of groundwater contamination in the concentrated area near the southern part of the Railroad parcel. Chirlin at 1582. There is more certainty in the northern portion of the Railroad parcel, because there is no alternative explanation except releases on the Railroad parcel. *Id.* The contaminated groundwater under the southern portion of the Railroad parcel could have come from a source like the D-D tank or from releases on the Railroad parcel. *Id.*

103. It is not within the realm of science to quantify the contribution from the Railroad parcel over the ground surface or through focused infiltration that has reached groundwater under the Site. Walton at 4078.

104. The Governments contend the two feasible sources of contaminants from the Railroad parcel are surface water that reached the southeast sump on the B & B parcel and groundwater infiltration. The scientific evidence is inconclusive, however, the

presence of agricultural chemical spills on the Railroad parcel contributed to the need to incur study costs.

O. *Listing of Site on National Priorities List (NPL)*

105. On October 4, 1989, EPA listed the 4.7 acre "Brown & Bryant, Inc. (Arvin Plant)" real property on the NPL. *See* 54 Fed.Reg. 41015, 41025 (October 4, 1989). The 0.9 acre Railroad parcel and the 3.8 acres B & B parcel were listed on the NPL as one facility. The Federal Register notice for the listing stated that the public docket available at EPA's regional headquarters in San Francisco contained documents relating to the evaluation and scoring of the Arvin Plant "in this final rule." *Id.* at 41, 016. These documents, including a map depicting the Site, show that the entire area inside the fence line, as it existed in 1989, was listed as one facility. *See, e.g.*, Ex. G-3, Ref. # 23.

106. The Railroads had actual knowledge that their parcel was listed as part of the Arvin NPL facility, but did not appeal EPA's rule-making to the United States Court of Appeals for the District of Columbia Circuit within 90 days of the listing. Ex. G-1. This forecloses the Railroads' ability to object to EPA's designation of the Site as a single facility.

107. Federal Regulations state that "If a party contests liability for releases on discrete parcels of property, it may do so if and when the Agency brings an action against that party to recover costs or to compel a response action at that property." 54 Fed.Reg. 41000, October 4, 1989.

P. *Bulk Storage of D-D managed by B & B*

108. B & B chose to store Shell D-D in a bulk storage tank at the Arvin plant. Patrick Reeves Deposition ("Reeves Dep.") at 103.

109. D-D is a corrosive solvent that corrodes through metal, and also attacks any kind of rubber, or seals. Brown at 758. D-D is a chlorinated compound that when exposed to water vapor in air, forms hydrochloric acid at the level of the liquid inside the storage tank. *Id.* at 759; Ex. 1125, at S003171 ("D-D soil fumigant is moderately corrosive. Moisture coming into the tank during in-breathing through the vent contributes to this corrosion. Use of a tank vent desiccant type drier or a low pressure inert gas blanket system will greatly reduce the amount of moisture present.").

110. Shell's customers' bulk storage of D-D among distributors west of the Rocky Mountains facilitated sales to large users of D-D in the agricultural valleys west of the Rocky Mountains. Haverland at 2289; Robert Swain Deposition ("Swain Dep.") at 25-27. Shell's marketing policy in the 1960s and 1970s encouraged bulk sales, requiring distributors to have bulk storage facilities for D-D.

111. Seventy-one bulk D-D storage facilities in the Western United States carried Shell products. *See* Ex. 1031.

112. B & B's annual marketing agreements with Shell stated: "Shell's objective in making this agreement with you is to maximize penetration of Shell's pesticides in the area of your primary marketing responsibility." *See* Ex. 1070; Brown at 755, 763-64. The marketing agreement required B & B to "[m]aintain adequate inventories of Shell pesticides in order to provide prompt shipments to customers throughout your primary area of responsibility." *See* Ex. 1070. B & B wanted to continue as a Shell distributor. To maintain adequate inventories of D-D pursuant to this arrangement, B & B had to buy a bulk

tank, keep it in good order, and store D-D in adequate amounts to supply to farmers. *Brown* at 765.

113. In the 1950s or 1960s, Shell sold D-D to Central Valley distributors mostly in barrels, as opposed to bulk liquid sales delivered to a plant storage tank. *Id.* at 757-58.

114. In the early 1960s, the transition to bulk storage presented problems with corrosion, rust, and leaking. *Id.* at 758. D-D bulk storage prescribed by Shell in its marketing programs was intended to and did economically benefit Shell.

115. The bulk storage of corrosive D-D in the 1960s that Shell facilitated, caused numerous tank failures and spills. Mr. Brown remembered, in particular, opening up one bulk D-D tank and seeing a foot of rust in the bottom. The tank was only a couple of years old. *Id.* at 759-60. D-D ate through mild steel. One could not predict when a tank would fail. *Id.* at 760. Corrosion of tanks, in areas of welds, often resulted in a sudden and unexpected failure of a D-D tank and large scale leakage of D-D. *Id.*

116. The corrosive effects of D-D caused B & B to replace the tanks on a regular basis. *Id.* A D-D tank would last only four to six years. *Id.* If it did not fail catastrophically, it would begin to "weep" at the top of the tank like frosting on a glass with ice. *Id.*

117. Similarly, the corrosive D-D caused rubber seals on pumps and valves to fail, suddenly and unexpectedly, causing big leaks. *Id.* at 760.

118. Ultimately teflon seals and special chemical hoses that cost three and four dollars a foot became available to handle D-D. *Id.* at 758. Nevertheless, in the late 1960s, teflon was fairly new and the price was prohibitive. *Id.* at 759. Stainless steel was the appropriate metal to use to store D-D in bulk, but it

was also very expensive at that point in time and stainless steel was seldom used by distributors. *Id.* As time went by, however, the difference in price between stainless steel and mild steel narrowed and it became affordable. *Id.*

119. Shell provided B & B with technical information about Shell agricultural chemical products and information regarding safe storage and handling practices. *See, e.g.*, Exs. 1102, 1103, 1109, 1119-1126. The information was suggested for B & B's benefit.

120. In about 1979, Shell instituted a marketing program called the "Bulk Facilities Improvement Allowance." Haverland, 2246:19-2247:9. The program provided rebates of 10 cents per gallon for improvements by D-D distributors in their bulk handling and safety facilities. Exs. 1078, 1079; Haverland, 2182:10-2183:5, 2246:19-2248:2, 2303:11-14. The program was voluntary and the distributor owned the improvements used in safety programs or the storage facilities. B & B was responsible for deciding which improvements would be made and how they would be made. There was no requirement that the reimbursed improvements be dedicated to D-D use. Rea Dep., 95:21-96:3.

121. In 1979, Shell learned that in certain areas independent distributors were not complying with applicable environmental laws and regulations. Haverland, 2274:12-15. In 1981, Shell revised its improvement program to include a qualification that each distributor retain an engineer to review and inspect the distributors' facilities to ensure compliance with all applicable laws and regulations, and then certify that improvements recommended by the engineer were made. *Id.* 2277-81.

122. Shell reserved the right to refuse to sell bulk D-D to any distributor who failed to obtain an inspection by a qualified engineer and provide self-certification of compliance with the applicable laws and regulations. *See* Ex. 1086; Haverland at 2284-85.

123. B & B submitted certifications for both the Arvin and Shafter facilities on or about December 29, 1981. *See* Ex. 1150.

124. The revised Shell program included an up-front financing option of which B & B did not take advantage. Exs. 1084 and 1086; Haverland at 2283.

125. B & B and Shell signed a Bulk Facilities Inspection/Improvement and Maintenance Agreement on March 7, 1984. *See* Ex. 1060.

126. B & B could have used any qualified engineer, including an in-house engineer to perform the inspection. Upon the recommendation of Shell, Boyle Engineering conducted the investigation as part of the improvement program. *See* Ex. 1028.

127. The only way Shell could encourage B & B to comply with applicable environmental laws and regulations was through Shell's ability to stop selling B & B its products. This did not become an issue until Shell established its revised program. Prior to that, the improvement program only included the 10 cent per gallon allowance. Haverland at 2247:3-9, 2253:3-7.

128. The improvement program applied to bulk products. D-D was the only bulk product B & B purchased from Shell.

129. A product similar to D-D, Vidden-D, was available from Dow. B & B sold Vidden-D from its Shafter site, not at Arvin. Brown at 958-960.

130. The only time a Shell representative, Engineer Robert Swain, inspected the Arvin Site was July 1979. The purpose of this inspection was to confirm whether

B & B's bulk facilities complied with applicable laws and regulations as summarized in Shell's D-D Handling and Safety manual. Exs. 1127, 1088, Swain Dep. at 66; Brown at 783-785.

131. There was no requirement that B & B submit to the inspection as part of the Bulk Facilities Improvement program. *Id.*

132. After the inspection, Mr. Swain's findings were communicated to Jack Brown at a meeting. Brown at 785:5-787:15. Swain's notes were then typed (Exhibit 1030) and a memorandum submitted to B & B. Ex. 1127A; Haverland, 2265, 2272, 2274.

133. As a result of the July 1979 inspection, Shell made a number of recommendations, which ranged from proposing three alternative solutions to address emergency pressure relief for the D-D storage tank to suggesting alternative solutions to address the engineer's conclusion that "breather vents" were too small. Ex. 1127.

134. As part of the Shell inspection requirement Patrick Reeves of Boyle Engineering inspected the site on September 10, 1981. Ex. 1028. The inspection covered the same equipment as Mr. Swain's inspection. There is no evidence Mr. Reeves wrote findings and recommendations. Compare Ex. 1028 with Ex. 1030.

135. Mr. Reeves testified that he was "absolutely not" managing B & B's operations. Reeves Dep. at 88.

136. On December 29, 1981, B & B certified to Shell that the Arvin facility had been inspected by a qualified engineer and improvements had been made at a cost of $38,500. B & B was reimbursed $13,946.70 by Shell based on 1981 Shell product purchases for both Arvin and Shafter of 139, 467 gallons. Exs. 1150 and 1092.

137. There is no evidence B & B took any specific action in response to inspector recommendations-other

than putting a dike enclosure around the D-D tank installed in 1981.

138. Mr. Swain's inspection summary did not recommend replacing the tank. Ex. 1030.

139. The D-D label advises users to rinse equipment and dispose of wastes (including spills and rinsates) away from domestic water supplies. Ex. 1103.

140. Prior to 1983, B & B never investigated to determine whether its sump and pond might endanger a domestic water supply. Brown at 966-67.

Q. *Spills and Leaks Were Inherent in D-D Tanker Deliveries.*

141. Bulk storage of D-D at the Arvin plant was by common carriers to the Shell-dedicated bulk D-D tank. *Brown* at 792.

142. Shell arranged for the delivery of Shell D-D to the bulk tank at Arvin by tanker trucks. *Id.* at 792, 1021; Merryman at 62. It is undisputed that spills were inherent in the delivery process that Shell arranged, and always occurred in differing degrees of magnitude.

143. Mr. Merryman testified that when the tanker trucks downloaded D-D into the D-D tank, buckets were placed underneath the hose connections. *Id.* at 35. After unloading and unhooking the hose, the delivery men would drain their hoses into a bucket and the contents would be dumped back into a storage tank. *Id.* at 36. Mr. Merryman saw D-D spill onto the ground in this process. *Id.* at 62. Mr. Merryman described D-D spills onto the ground as a common event. *Id.* at 35-36.

144. Mr. Merryman also saw material come out of the couplings of the D-D rigs delivering to the bulk tank and saw D-D spill on the ground. *Id.* at 62-63. Spills varied from a few cupfuls to enough to fill a 5-gallon bucket. *Id.* at 63.

145. Mr. Brown also testified that the trucker would hook up the tank on the truck to the bulk tank with a two-inch or maybe a three-inch hose, turn on a pump and pump the D-D into the bulk tank. *Id.* at 792. If the trucker supplied his own pump, after he shut off the pump, the hose would have residual D-D in five to ten feet of hose. *Id.* at 793. Mr. Brown testified that the drivers normally used a bucket to pour the residual D-D in the hose into the bucket and then pour it back into the truck, or sometimes into a tank B & B had for such "dregs." *Id.* at 792-93.

146. Mr. Brown testified that the procedure of draining the hose back into the bucket often resulted in spills. *Id.* at 983. He commonly saw spills when drivers "walked the bucket." *Id.* at 983. Spills occurred almost every time of delivery. *Id.* at 794.

147. Gary J. Leary, a trucker, also testified about spills during deliveries. In 1974 or 1975, Mr. Leary worked for Mitchell West Trucking hauling farm chemicals, and he made deliveries to B & B at Arvin. *Id.* at 1834. He delivered fertilizers on behalf of various manufacturers. *Id.* at 1835. Mr. Leary was familiar with the types of trucks used in the ag-chemical industry and saw tanker trucks filling up the D-D tank at Arvin several times. *Id.* at 1838. The equipment was similar or exactly like what he used and the procedure was exactly the same. *Id.* at 1847-48.

148. Mr. Leary explained that the delivery trucks had pumps mounted on them, operated by a PTO or power take-off unit. *Id.* at 1840. The pump was plumbed into the tank to enable connection of a detachable hose to the truck pump and to the receiving tank. *Id.* The receiving tank normally had a threaded fitting to receive the hose connection. *Id.* This fitting had a gasket, or a rubber ring or seal located inside the

fitting to stop leaks. *Id.* at 1842. Normally the trucking company owned the hose. *Id.* at 1840-41.

149. After the hose was connected at both ends, the driver turned on the pump and opened the valve that controlled the material coming out of the tank truck and allowed it to flow to the pump and be pumped off. *Id.* at 1842. Commonly, leaks occurred through the gaskets and at the packing in the pumps themselves. Every load would have a drip or two. *Id.* at 1842.

150. Mr. Leary testified that he placed a bucket under each one of the fittings to catch the drips. *Id.* at 1843. When he finished the unloading process, he would disconnect the hoses and there was always a little residual material left in the hose that he would drain back into the bucket. *Id.* at 1843.

151. Normally a driver would disconnect at the truck head and lay the flexible hose down on the ground, with the end of the hose hanging over the edge of the bucket. *Id.* at 1843-44. Then he would lift the hose at the far end and allow the material to drain down towards the bucket. *Id.* In this process, as he came closer to the bucket, the bucket sometimes became unstable and would tip over, spilling the contents. *Id.* at 1844. Otherwise, from time to time there could be excessive material in the hose and it would overflow the bucket. *Id.* at 1844. In addition, the hose would commonly be tossed on the ground after the process of draining to the bucket and residual spills would occur from the hose. *Id.* at 1844-45. The trucks had hose tubes on them, and feeding the hose into the hose tube would cause residue to drip out of the hose on to the ground from time to time. *Id.* at 1845.

152. When the receiving tank had a powerful pump, the methodology was different. *Id.* at 1844. For example, B & B's big UN-32 tank had a large, powerful

pump on it. *Id.* Mr. Leary testified that he liked to unload there because it would unload much quicker than with his truck pump. *Id.* In that situation, there was less likelihood of a spill because he could break the line at the truck, close the valves, break the fitting loose and that would allow a little air to come in the hose and suck residual product out of the hose and into the receiving tank. *Id.* Even with a powerful pump on the receiving tank, however, a bucket was still necessary and used because nine times out of ten, the gaskets would leak. *Id.* at 1873. Even for hauling fertilizer, Mr. Leary carried extra gaskets due to constant gasket failure. *Id.* at 1874. Mr. Brown testified that even with a pump at the tank, spillage of at least a half a quart would occur. *Id.* at 984.

R. *Shell's Awareness of Delivery Procedures*

153. Shell took similar D-D deliveries at its own Central Valley agricultural chemicals operation, Western Farm Services' facilities. Leary at 1851-52; Brown at 926-28.

154. Mr. Haverland testified that the various names given a "sales allowance" were simply euphemisms for a discount to protect the list price of a product, and that whatever the name of the allowance, whether "evaporation allowance, promotional allowance, or competition allowance," the purpose was to give a price discount to meet competition. Haverland at 2230. However characterized, there was a monetary allowance to B & B for product Shell expected to be lost in the process of delivery and storage.

155. Exhibit 1123, which is Shell's "Outline of General Guidelines for D-D Soil Fumigant Bulk Installations," recognizes the practice of "walking the bucket" at Bates No. S003568. It states: Commercial carriers usually delivered through a three-inch cam-

lock female fitting. If the pump had sufficient capacity, it could be used to off-load the carrier and, in so doing, the carrier's hose will be drained. If the carrier's pump is used, the hose between the pump and the truck tank will remain full and must be drained back into the truck or other suitable container.

156. Mr. Swain, a former Shell employee who drafted Shell's D-D tank inspection checklist in 1978, admitted that the delivery of D-D to the bulk storage tanks resulted in spills of D-D. Swain Dep., at 132-35. He testified that it was a common practice in Shell's understanding for distributors to use a five gallon bucket or pails to catch leaks from the tanker truck. Swain Dep. at 132-35. In addition, drips and spills occurred from the hose after disconnection. Swain Dep. at 132-35.

157. Spills of D-D from hoses and couplings during the D-D delivery process on the B & B parcel was a common occurrence. Despite the use of buckets to catch spills, a few cupfuls to 5 gallons of D-D would frequently spill on the ground. Some spillage of D-D was unavoidable. Merryman at 35:16-36:1; 62:10-18; 63:1-10; Brown at 794:5-8, 795:14-18; 984:14-24; Leary at 1840:1-1841:1, 1842:15-1844:9, 1946:3-19, 1973:18-24, 1976:17-1877:6.

158. Shell's handling instructions were not limited to the delivery of the D-D, but also included spillage. *E.g.*, Rea Dep. at 209:13-210:13 ("dry disconnects" required to minimize spillage from hoses during loading and removal of D-D); D-D Manual, Ex. 1119, Bates No. S003251, S003255, S003263, (decontaminate areas where spillage has occurred and rinse out containers with water, keep out of waterways); S003256, S003263A (disposal of rinsates); S003269 (wastewater from washing down of spills should be absorbed or drained to a sump); D-D Safety Guide, 9/76, Ex. 1122,

Bates No. S003561 (collection of rinsates from washing empty containers); Outline of General Guidelines for D-D Soil Fumigant Bulk Installations, Dec. 1981, Ex. 1123, Bates No. S003566 (Spill containment required includes lined remote containment area).

159. D-D leakage and spills were an inevitable and expected part of the delivery process.

S. *Shell Owned the D-D at Time of the Delivery Arrangement.*

160. It is undisputed that Shell manufactured the D-D in Louisiana and Texas and stored it at a GATX terminal in San Pedro, California prior to shipment to B & B. Haverland at 2201. The terms of the D-D sale for B & B were F.O.B. the customer's facility. *Id.* at 2208. Shell arranged for D-D delivery through common carriers, i.e., tank trucks. According to Mr. Haverland, F.O.B. destination did not mean that B & B had title to the D-D simply because a delivery truck entered the facility, but that B & B had stewardship. *Id.* at 2209. The Shell documentation arranging for delivery, however, referenced the fact that the drivers of the tanker trucks had to have certain equipment for transferring the D-D into the storage tank, evidencing direction and control by Shell. Transferring the D-D to the bulk storage tank was the purpose of the distributorship/marketing agreements between the parties and each individual sale. Shell still controlled the process of deliveries, regardless of what the documentation said about F.O.B. destination. The intent of the contract was that "stewardship" of the D-D delivered to B & B once the common carrier entered the site. Haverland at 2208-09.

161. As of the time that Shell arranged for a common carrier to make the delivery, the D-D was

under Shell's ownership and possession in San Pedro, at the GATX terminal.

T. *Around 1978 Regulatory Officials Began to Scrutinize Agricultural Chemicals.*

162. In 1978, the State of California discovered that workers at Occidental Chemical's DBCP plant in Lathrop, California had become sterile. Mandel at 261-62. A large release of DBCP to groundwater had occurred at the Occidental plant. *Id.* at 262.

163. On October 29, 1979, EPA issued a suspension order for Shell Nemagon, which contained DBCP. Ex. 1077.

164. In 1978, the Regional Water Quality Board inspected B & B's Arvin facility and requested that B & B line the drainage pond and the wash sump to prevent contamination of groundwater. Ex. G-71; Brown at 775-76, 780. B & B was found to have discharged wastewater containing pesticides into the underlying groundwater and ordered to complete a report of waste discharge and a correction plan.

165. Exhibit 1119, is a Shell manual for D-D soil fumigant, for handling and safety. *Id.* at 780. The second page of this exhibit is a letter, dated August 4, 1978, which states: "Gentlemen: Handling and storage of pesticides have always called for the utmost in care and consideration. The enactment of numerous laws and regulations, not only from the EPA, but also from OSHA, DOT and state and local governments, has made this task increasingly complex for all of us. We have always been concerned that our products are used only in accordance with proper instructions and regulations. The attached D-D Soil Fumigant Handling and Safety Manual is our best effort to tie many of these regulations and safety considerations together and give you our interpretation of what they

mean. Of course, you will always want to review these regulations and make your own interpretations of such matters." The bottom of the page states: "We feel that the safe handling of our products is a responsibility of good citizenship and can go a long way in preventing criticism from the opponents of agricultural chemical tools." *Id.* at 782.

U. *The Purpose of the Manual Was to Promote Environmental Compliance.*

166. The 1978 Shell manual addressed the issue of environmental protection. Reeves Dep. at 103-04, 108.

167. Shell was well aware that liquid D-D is flammable, highly corrosive and toxic. Reeves Dep. at 60, 63.

168. Shell understood that spillage of D-D onto the ground posed a substantial threat of groundwater contamination. *Swain Dep.* at 129. Shell knew that if there were a sizable spill, the D-D could "percolate into the ground." *Id.* at 129. According to a Shell employee, Shell was definitely concerned about the D-D getting into the groundwater; it was a "no-no." *Id.* at 157.

169. Shell did not explain the environmental hazards of D-D bulk storage to B & B beyond what the product labels stated. *Id.* at 783; *Brown* at 768, 775. The Shell label, which B & B had to follow, advised that D-D should be kept "away from water supplies." *Id.* at 766, 768, 855; Ex. 1070. No technical advice or explanation of the mobility of D-D was provided for what "away from" meant. *Id.* at 768, 770.

170. Shell advised that D-D tanks should be kept on firm foundation, that D-D spills should be excavated and surfaces washed with water. Ex. 1102, Bates No. S003172 ("The tanks must be set on a firm foundation."); Ex. 1121 ("Spread a generous amount of an absorbent on the spilled D-D, such as diatomaceous

earth, clay, soil, sawdust, et cetera. Collect the spent absorbent in a disposal drum. Repeat as needed to collect all liquid... If the spill is on the ground, dig up enough of the surface to eliminate the contamination, placing it in a disposal drum.... Wash equipment and surfaces with a detergent solution and rinse with water. Collect the washings with absorbent, as above.").

V. *The Shell Manual Made Recommendations as to Aspects of the Operation of Tanks.*

171. The 1978 Shell manual considered itself the company's "best effort to time many ... regulations ... together." Companies were free to "make [their] own interpretations." Reeve Dep. Page 21 addressed how the Shell bulk storage tank was to be constructed and operated. Reeves Dep. at 21-22.

172. The Shell manual, which B & B was required to follow, detailed all the protective equipment employees had to wear to load and unload D-D, and specified the types of metals that were best for withstanding the corrosive qualities of D-D. Reeves Dep. at 52, 53, 58-59, 66, 70.

173. The manual stated that unloading operations from a delivery truck to a bulk storage tank should take place over an impervious surface with a containment area because of potential leakage. See Reeves Dep. at 67-68, 71. The Shell manual's purpose was to prevent a situation where the hose would lay around and someone would "pick it up later and, you know, how it will dribble out on the ground." Reeves Dep. at 62-63. There is no evidence that B & B ever had an impervious surface while it was receiving and storing D-D.

174. Shell's manual recommended that tanks have closed air circulation systems to minimize corrosion

from air intake and consequent leakage down the sides of the tank, which was common. Swain Dep. at 172.

175. Shell recommended "quick connect" hose couplings be used and that suction pumps be located at the storage tank. Reeves Dep. at 52, 62-63, 65; Ex. 1414.

176. The manual stated that the tanks themselves should rest on an impervious surface and that a containment dike be placed around the bulk tank," so that if it leaked it wasn't going to get into the underground." Reeves Dep. at 55. A gravel or rock foundation was not appropriate. *Id.* The dike was to contain a catastrophic spill. *Id.* at 17, 53-54, 73.

177. Shell's manual also stated that run-off from the facility should be controlled so that streams would not be contaminated. *See* Ex 1032; Swain Dep. at 110, 128, 134. This was especially true if a facility did not have secondary containment. Swain Dep. at 110, 128, 134.

178. Shell's manual was comprehensive and had many other recommended details on how to operate a storage tank. *See* Ex. 1032.

179. Shell recognized that most of the Bulk D-D Facilities were bare-bones operations that often cut corners and did not comply with safety and environmental requirements. Swain Dep. at 106, 118, 136.

180. This was true, even of the Shell-owned facilities, such as Western Farm Services, which had to operate as profit centers. *Id.* at 136.

181. In 1978 or 1979, Shell implemented the requirements of its manual. *Id.* at 59, 63, 68. Shell developed a checklist of the manual requirements and organized an extensive inspection program to make sure D-D tanks were being operated according to the Shell manual's dictates. Reeves Dep. at 18, 21-22.

182. A Shell memorandum describes the purpose of inspections: "These inspections are in the form of a technical audit in which the customer's facilities are inspected and then reviewed with him for compliance with the Shell D-D soil fumigant handling and safety manual." Swain Dep. at 100; Ex. 1088.

183. A local Shell marketing contact, who was already fully familiar with the bulk D-D facility and the requirements of the manual, always accompanied the inspector. Swain Dep. at 160-61; *Reeves Dep.* at 17-18, 27, 39, 40-41, 105. Sometimes the inspector was a Shell employee and sometimes the inspector was an independent engineer hired by Shell to perform the inspection. When an independent engineer was used, however, the distributor had to pay the fees. Reeves Dep. at 24-25.

184. If the inspector found that a facility was not in compliance with the manual, the distributor would be "written up." Reeves Dep. at 18.

W. *Few Bulk Facilities Were in Compliance.*

185. A report on the first wave of inspections that included the B & B Arvin plant and some of Shell's Western Farm Services plants stated: "This series of inspections found that not one of the customers visited had a totally satisfactory spill containment system." Swain Dep. at 104.

X. *B & B Is Insolvent*

186. Mr. Brown testified that eventually the insurance companies denied coverage for environmental pollution at the Site and cut off all funds to B & B. B & B's bank stopped financing B-B's business and B & B was essentially broke. *Id.* at 832-33. He closed the company and transferred most B & B employees to another company in December 1988. *Id.* at 833.B & B is now insolvent. *Id.*

Y. *B & B Was a "Sloppy" Operator*

187. The evidence establishes by more than a preponderance that throughout its operations, B & B personnel spilled chemicals, allowed chemical leakage, and rinsed down equipment, causing hazardous agricultural chemicals to be released to the environment, which directly caused the present need for CERCLA remediation. In the first twenty years of its operations, B & B took almost no precaution to prevent the release of hazardous agricultural chemicals into the environment.

Z. *EPA Incurred Costs in Response to a Release or Threatened Release of a Hazardous Substance from the B & B Arvin Plant.*

188. In 1989, the federal Agency for Toxic Substances and Disease Registry ("ATSDR") conducted a preliminary health assessment of the B & B facility and concluded that the site was a potential health concern. Ex. 1446A, RI at 1-7. ATSDR recommended further site characterization. The ATSDR health assessment is required for all NPL sites within one year of listing. 42 U.S.C. § 9604(i)(6)(A). EPA's SCORES summary shows that EPA reimbursed ATSDR $31,239.55 for the preliminary health assessment. Ex. G-10, Section 1, at 1.

189. In the summer of 1989, Robert Mandel was assigned to be the EPA on-scene coordinator at the B & B Arvin Site. He visited the Site in the summer of 1989 for a preliminary investigation and learned about the past history from State officials and private consultants hired by B & B. *Id.* at 261-62. He decided that the EPA needed more information to determine if the site posed an immediate threat. *Id.* at 262.

190. Mr. Mandel has prior experience with pesticides. *Id.* at 262. In 1978 and 1979, he was assigned to the State of California as a deputy registrar for the Structural Pesticide Control Board of the Department of Consumer Affairs. *Id.* at 260. He worked on the DBCP problem at Occidental Chemical's facility in Lathrop, California where numerous workers had become sterile through exposure to DBCP. *Id.* at 262. Mr. Mandel discovered the Occidental plant released a large amount of DBCP into the groundwater. *Id.* at 262. One surprising conclusion from Mr. Mandel's investigation of DBCP at the Occidental site was how mobile it was in the subsurface. *Id.* at 262. Even though it appeared to be relatively insoluble in water, DBCP was migrating downgradient very quickly. In addition, due to its toxicity, very small quantities of DBCP, in the low parts per billion, could ruin drinking water supplies. *Id.* at 262. Mr. Mandel concluded that even a small release of DBCP could have extreme, adverse consequences to groundwater. *Id.* at 262-63.

191. Mr. Mandel was aware that in the mid 1980s, there was a widespread problem in the San Joaquin Valley with DBCP turning up in drinking water wells in Fresno and Merced Counties. *Id.* at 263. This resulted in the closure of many wells, because the treatment technology to clean up DBCP contaminated groundwater to make it safe to drink, was considered impractical or just too expensive. *Id.* at 263.

192. As part of his initial assessment, Mr. Mandel became aware that DBCP and other similar compounds had been used by B & B at the Site. *Id.* at 263. Out of the dozens of compounds known to be at B & B Site, Mr. Mandel focused on what he thought were the most dangerous and the ones most likely to be migrating off-site: DBCP, EDP, dichloropropane and

trichloropropane, as well as the herbicide, dinoseb. *Id.* at 263.

193. Mr. Mandel relied on EPA's Environmental Response Team (ERT) based in Edison, New Jersey for initial technical advice. *Id.* at 332-33. The ERT is an EPA organization that provides technical and engineering advice and analytical support to the Superfund program. *Id.* at 333. ERT helps regional EPA personnel develop solutions to difficult environmental issues. *Id.* at 333. Through Mr. Mandel, ERT became involved at the B & B Site in the summer of 1989. *Id.* ERT helped Mr. Mandel establish a sampling grid on-site and collected surface or very shallow depth samples. *Id.* at 264, 333. ERT's contractor, Roy F. Weston, had a REAC contract. *Id.* at 333-34.

194. EPA also relied on Ecology and Environment, Inc. ("E & E"), an EPA contractor with a Technical Assistance Team ("TAT") contract. Personnel from Roy F. Weston also provided assistance under an EPA TAT contract. *Id.* at 320-21.

195. Through conversations with state officials familiar with the Site, Mr. Mandel learned that Arvin municipal drinking water well No. 1 was located approximately 1,700 feet downgradient of the site. *Id.* at 265.

196. Don Woody was a Senior Geologist at E & E, who headed up the TAT team for the B & B project. Woody at 390. Don Woody investigated the Arvin well and concluded that it was constructed so that contaminated water located more than 50 feet below ground surface could infiltrate and cause contamination of the drinking water. *Id.* at 265, 400-02.

197. After Mr. Mandel's initial review of the Site, he concluded that the Site was potentially

contaminated with mobile volatile pesticides, but did not know whether there was a release occurring outside the fenced boundary of the plant. *Id.* at 265-66. Mr. Mandel decided to perform a Site Assessment to determine if the B & B facility was an immediate threat to human health or the environment. *Id.* at 316-17. He was trying to confirm whether pesticides that were released at the facility were actively migrating offsite, posing a threat to human health and the environment, in particular, the Arvin city well. *Id.* at 317.

198. Cynthia Wetmore, began work at EPA Region IX in the Remedial Action Branch in October 1989. Wetmore at 236, 43. She was assigned to be the Remedial Project Manager ("RPM") for the B & B Arvin Site to perform a Remedial Investigation/Feasibility Study ("RI/FS") and to select a remedy for the Site as reflected in the Record of Decision ("ROD"). *Id.*

199. The RI collects data necessary to adequately characterize the facility for the purpose of developing remedial alternatives. *Id.* The RI attempts to determine the scope of the contamination at a Site. *Id.* The FS involves the preparation of a list of remedial alternatives that are compared according to the nine criteria in the National Contingency Plan ("NCP"). *Id.*

200. Mr. Mandel determined that the Site Assessment investigation could support the RI. Mandel at 318. Mr. Mandel had extensive discussions with Ms. Wetmore to be sure that the data he was going to generate would be useful for the long-term response. *Id.*

201. The most serious safety concern at the Site was the hazard to workers from inhaling DBCP. *Id.* at 268. OSHA set such a low tolerance for DBCP that

EPA could not measure it in the area samples were drilled. *Id.* In the absence of assurance that there was no DBCP exposure above the OSHA limit, all activities within a 50 foot hot zone of the drilling had to be at Level B protection. *Id.* at 268-69. Level B entailed supplied breathing air through supplied air masks and impermeable rubber-type suits with rubber gloves, rubber boots, and absolutely no skin exposed anywhere. *Id.* at 269. All the seams were taped with duct tape. *Id.* The requirement for level B materially increased the costs of the Site Assessment on the order of three or four times. Woody at 429, 480.

202. One of the purposes of Site Assessment was to try to fill in gaps in what was known about subsurface lithology, i.e. the nature of the subsurface, the layers or formations, such as clay, sand or gravel, to identify areas where contaminants would be found. *Id.* at 317. Don Woody, a Senior Geologist, with E & E investigated the nature of the subsurface. *Id.* at 393.

203. The Arvin site is located near an "alluvial fan," where different types and sizes of sediments and soils washed down from the Tehachapi Mountains. Based on energy of the flooding event or stream, these materials were deposited over millions of years as interlocking and varying lenses of material. *Id.* Some of these lenses are clay, some of them are silts, and some are sands and gravels, each of which has a different permeability through which water moves at different speeds. *Id.* Mr. Woody testified that water moves preferentially through higher permeability materials, such as sands and gravels, as opposed to clays. *Id.* Water preferentially seeks out sand lenses, and zig-zags its way downward. *Id.* at 398-99.

204. Different layers of varying permeability have created different water bearing zones. *Id.* The top 200 feet of the Site subsurface generally consists of

interlocking sands, clays, silts and gravels. *Id.* at 394. In the first 60 to 80 feet below ground surface there is a "perched aquifer," also called the A zone. *Id.* In a perched aquifer, the water migrates down to a zone of lesser permeability, where its downward path is suspended, like water in a clogged drain. *Id.* The water still migrates downward but does so more slowly. *Id.*

205. At around 200 feet below ground surface is a strata known as the "Corcoran clay." *Id.* at 395. The Corcoran clay is a solid impervious clay; it was not deposited as lenses from the flooding off the mountains. *Id.* at 398. It is not lenticular in nature. Resting on top of that continuous and thick clay is the regional unconfined aquifer referred to as the B Zone. *Id.* at 397-98. Below the Corcoran clay is the C-Zone aquifer or the regional confined aquifer. The C aquifer is used to draw water for municipal use. *Id.* at 400.

206. The Site Assessment was expected to be expensive because of level B protection. Mr. Mandel concluded that one of the ways EPA could save time and money in Site investigation was to use an on-site mobile laboratory to reduce analytical turnaround time. Mandel at 325. EPA used a Field Analytical Services Program or "FASP" lab. The FASP lab operated under a Field Investigation Team contract with Ecology and Environment, Inc. *Id.* at 334. EPA's SCORES summary also shows that EPA paid $7,214.62 to E & E for operation of the on-site laboratory during the Site Assessment. Ex. G-10, Vol 1, Section 1, at 1.

207. In Fall of 1989, Mr. Mandel developed a budget for the Site Assessment and analysis project of about $1.5 million dollars; the final costs were closer to $2 million dollars for the TAT contract services. *Id.* at 278, 339.

208. Mr. Mandel was in charge of making sure that E & E performed the contract properly. *Id.* at 320. He reviewed the costs as they were incurred for the TAT contracts on a daily basis. *Id.* at 322. Typically an EPA on-scene coordinator, four drilling subcontractors, four to eight TAT employees, and the personnel in the two FASP labs were on-site. *Id.* at 322-23.

209. Mr. Woody explained that E & E was dedicated by contract to EPA. *Id.* at 433. EPA issued a project number and a technical direction document for the Site work to be performed. *Id.* at 433-34. E & E employees kept time records which Woody reviewed. *Id.* Mr. Woody made sure that the actual bills, generated back in the office that were sent directly to EPA, were accurate. *Id.* at 436.

210. Mr. Woody oversaw the subcontracts that E & E had for the Arvin site. *Id.* He had no reason to doubt the accuracy of any of the subcontractor invoices that he signed off on. *Id.* at 434.

211. EPA's SCORES summary shows that EPA paid E & E $2,043,133.36 and Roy F. Weston $34,190.48 for assistance in the Site Assessment under TAT contracts. Ex. G-10, Vol 1, Section 1, at 2.

212. Based on the Site Assessment, EPA concluded that there was a release of hazardous substances from the "plant." *Id.* at 418. Three groundwater monitoring wells to the south and west of the Site as well as soil sampling showed contamination. *Id.* Three monitoring wells also showed that the gradients of the upper two aquifers are heading in a southerly direction generally towards the municipal well; this showed a threat to that well and to the people in the vicinity. *Id.* at 419.

213. Mr. Mandel believed that the Arvin municipal well was in danger. *Id.* at 335-36. This investigation and its results did not relieve his concern that there

was an immediate threat to the well. *Id.* at 342. Mr. Mandel ceased drilling because he documented an ongoing hazardous substance release from the plant. To fully characterize what was happening from the edge of B & B's plant to the Arvin well would have required the installation of many more deep monitor wells, which was beyond the budget for the removal program's investigation. *Id.* at 336. Mr. Mandel, however, did recommend that the emergency response group excavate some heavily contaminated dinoseb soils and sediments that were on site. *Id.*

214. After the TAT report was finalized in November 1990, EPA decided to perform a removal action in connection with a highly contaminated "hot spot" of dinoseb contamination near the east fence line of the Site. This contamination resulted from a 1983 tank leak.

215. In February 1991, Christopher Weden assumed responsibility from Mr. Mandel as the lead on-scene coordinator for the Arvin Site. Testimony of C. Weden ("Weden") at 513. Although the potential for contamination of the Arvin Well was still a concern to EPA's Emergency Response Section, Mr. Weden did not address this issue because EPA had issued a Section 106 order to the Railroads to install monitoring wells between the Site and the Arvin well, to act as an early warning mechanism. *Id.* at 514. The order also required the Railroads to perform other improvements around the site such as fence repair. Therefore, the Emergency Response Section was able to focus on the dinoseb hot spot, located on Ex. 687, around coordinates V and W and between 18 and 21. *Id.* at 515.

216. After obtaining approval of a budget of $841,193, Mr. Weden issued a delivery order to CET Environmental Services (formerly Thorne

Environmental Services), under an Emergency Response Cleanup Services contract ("ERCS"), to mobilize at the Site. *Id.* ERCS contractors generally perform the actual physical cleanup work in a removal action, as opposed to the technical assistance provided by the TAT contractor. *Id.* at 516. The ERCS contractors also provide equipment to perform the construction-type work. *Id.* On-scene coordinators such as Mr. Weden supervise the TAT and the ERCS personnel while they work on site. *Id.* at 517. To keep track of ERCS costs, ERCS contractors generate a daily computer form called a "1900-55." *Id.* That form details all labor, materials, equipment, and subcontracts that are used for that day. Mr. Weden, as on-scene coordinator reviewed that list for accuracy and signed off on it daily. *Id.* at 517-18.

217. The soil in the hot spot was highly contaminated with dinoseb, it could not be disposed of at a landfill which caused Mr. Weden to use an alternative treatment technology to remove the contaminants from the environment. *Id.* at 520.

218. EPA commissioned Roy F. Weston, working for ERT, to determine whether bioremediation would work. *Id.* Bench studies showed that bioremediation would not work because of the high levels of contamination. *Id.* at 521. The dinoseb killed the microorganisms that were supposed to attack the contaminants. *Id.* For that reason, Mr. Weden decided to wash the dinoseb out of the contaminated soil and to use an UV/ozonation system to treat the rinse water. *Id.* at 522-24.

219. The objective of the removal action was only to eliminate the hot spot, not to "remediate" the entire site or rid the entire site of dinoseb. *Id.* at 540. Protecting groundwater was an important factor in the decision. *Id.* EPA wanted to remove this highly

contaminated soil because of its potential adverse impact on groundwater. *Id.* The removal action was only to support the larger remedial action that would occur in the future. *Id.* at 541.

220. CET arranged for delivery of equipment needed to do the soil washing and containment of the resulting leachate. *Id.* at 515. Over the course of a month, EPA removed approximately 80 yards of contaminated soil from the dinoseb hot spot. *Id.* at 524, 534.

221. EPA rinsed the contaminated soil and treated the contaminated rinse water with the UV/Ozonation treatment system to break down and destroy the dinoseb molecules in the leachate. *Id.* at 524. EPA's ERT group subcontracted with Solarchem to provide an operator and a unit to perform the UV/Ozonation treatment. *Id.* at 525. EPA's SCORES computer summary shows that EPA paid $23,995.00 to Solarchem Environmental Systems for work related to the dinoseb removal. Ex. G-10, Vol 1, Section 1, at 2.

222. Mr. Weden tried to coordinate his activities with Cynthia Wetmore, EPA project manager. *Id.* at 526-27. Ms. Wetmore asked Mr. Weden to remove some of the tanks that were on the site, because EPA wanted to perform more assessment of the subsurface areas where the tanks were standing. Mr. Weden modified the delivery order and the statement of work, obtained additional funding for the project, and obtained necessary approvals from upper management. *Id.* at 527.

223. Mr. Weden increased the budget ceiling, to $1,323,593.00, to include the tank removal. *Id.* In 1992, Mr. Weden remobilized at the site and removed the tanks and their contents. *Id.* He used CET, under the ERCS contract. *Id.* at 527-28. TAT personnel also

were on-site most of the time to perform health and safety monitoring and to arrange for sampling and analysis activities. *Id.* at 528.

224. Mr. Weden kept careful track of the budget as he supervised the work of contractors at the Site. *Id.* The total cost for CET under the ERCS contract was around $540,000.00. *Id.* The costs incurred by Roy F. Weston under the REAC contract were about $400,000.00, and the E & E costs under the TAT contract were $230,000.00. *Id.* at 528. The total cost of these activities was around $1.3 million dollars, including EPA's internal "intramural" costs. *Id.* at 529. EPA's SCORES summary shows that EPA paid $541,525.31 to CET, $229,111.09 to E & E, and $409,086.21 to Weston through ERT. Ex. G-10, Vol. 1, Section 1, at 1-2.

225. When Ms. Wetmore was assigned to work on the RI/FS in 1989, her supervisors told her that the RI/FS would be an in-house RI/FS. *Id.* at 236, 243. Nonetheless, she received assistance from E & E, a national EPA contractor, under an Alternative Remedial Contract Support ("ARCS") contract. *Id.* at 245. Normally a contractor prepares the entire RI/FS. *Id.* at 244. To conduct the RI, EPA relied on E & E to help prepare and review sampling work plans for the Site and to generally assist in additional sampling. *Id.* at 245-46.

226. Ms. Wetmore supervised E & E. *Id.* at 248. She generally told the E & E employees what she needed, and E & E proposed the costs and negotiated with the EPA to reach agreement on the cost. *Id.* E & E submitted monthly progress reports. Ms. Wetmore assured that the work was being performed in the agreed-upon number of hours. *Id.* at 248, 251. She had a budget for the project and kept track of costs as they arose. *Id.* at 248, 251.

227. EPA's computer SCORES summary shows that EPA paid $650,265.89 to E & E pursuant to the ARCS contract for assistance in the RI/FS and the remedial action. Ex. G-10, Vol 1, Section 1, at 1.

228. Ms. Wetmore set up a separate billing number for the EPA's in-house RI/FS costs, to compare actual costs to what EPA ordinarily paid contractors to perform an RI/FS. *Id.* at 249. The total contractor costs including payments to the State for the RI/FS were under $1 million. *Id.*

229. EPA relied on EMSL/Lockheed in Las Vegas to do seismic refraction. *Id.* at 246. The purpose of this seismic investigation was to determine whether the clay at the A-zone level was continuous or if there was a possible fault in the A layer. *Id.* The seismic refraction provided information on the continuity of the clay layer. *Id.* Lockheed Engineering also performed overflights for aerial photographs. *Id.* EPA's SCORES summary shows that EPA paid $55,911.86 to Lockheed Environmental Systems and Technology for the seismic investigation. Ex. G-10, Vol 1, Section 1, at 1; Vol 27, Section 1, at 1.

230. EPA reimbursed the State of California for participation in the RI/FS process. *Id.* at 246. The State reviewed documents, participated in meetings, and gave substantial input on the legally applicable or relevant and appropriate criteria ("ARARs") pursuant to CERCLA Section 121(d)(2)(A), 42 U.S.C. § 9621(d)(2)(A), that must be followed in remedy selection. *Id.* at 247. The State had to concur in the remedy selection, and EPA reimbursed the State for its participation. *Id.* Through a grant from EPA, state personnel were involved in the RI/FS process. They attended meetings, reviewed documents, and helped determine State ARARs.

231. Ms. Wetmore negotiated with the State regarding the tasks that would be accomplished by the State and reached agreement with the State upon the number of man-hours required for the project. *Id.* at 247. EPA's SCORES summary shows that EPA paid $155,410.30 to the State of California for assistance and oversight. Ex. G-10, Vol 1, Section 1, at 1.

232. After a remedy is selected in the Record of Decision, the remedy then is designed in the remedial design phase. *Id.* at 249-50. The design phase entails producing drawings and construction documents to allow for the actual construction of the remedial action. *Id.* at 250.

233. After a remedy was selected in November 1993, EPA entered into an interagency agreement with the Army Corps of Engineers to design the remedy. *Id.* at 250. Ms. Wetmore established a budget under $500,000.00 and the Corps provided monthly progress reports to document the work that was performed. *Id.* at 250-51. Ms. Wetmore reviewed the progress reports and billings to ensure that the project remained under budget. *Id.* The remedial design came in under budget. *Id.* at 251. EPA's SCORES summary shows that EPA paid the Corps $481,217.74 for remedial design under the interagency agreement. Ex. G-10, Vol 1, Section 1, at 1.

234. EPA entered into an interagency agreement for the Corps to construct the remedy. Testimony of Travis Cain, ("Cain"), at 1381-82. By this time, however, Travis Cain had taken over as the Remedial Project Manager, and he actually supervised the construction of the remedy. *Id.* EPA's SCORES summary shows that EPA paid $41,115.74 to the Army Corps of Engineers for the remedial action construction, which began before November 7, 1996. *Id.*; Ex. G-10, Vol 1, Section 1, at 1.

235. In 1990 Tom Huetteman was assigned to work on the B & B Site to review sampling and field data. *Id.* at 562. He took the lead role for the Quality Assurance Management Section ("QAMS") in reviewing the analytical data for EPA's planned in-house RI/FS for the Site. *Id.* at 562-63. He helped develop the RI work plan, the quality assurance project plan, and the field sampling plan. *Id.* at 564. He also conducted some field sampling, primarily of groundwater, and a limited amount of soil sampling, including surface soil. *Id.*

236. Due to the tremendous volume of sampling, EPA relied on contractors to help manage that activity. *Id.* at 586. QAMS used a contractor called Viar, formerly known as "Dyncorp Viar." *Id.* at 585. Viar helped manage the network of laboratories that were part of the CLP program. *Id.* at 585. When EPA Region IX needed analytical services, QAMS used Viar to obtain those services through dozens of CLP laboratories around the country. *Id.* at 586. In addition, Viar provided oversight for EPA of such analytical work. *Id.* Certain "routine analytical services" were assigned to the stable of laboratories as the work came in. *Id.* Viar also subcontracted for "special analytical services," for unique tasks, such as dinoseb analysis. *Id.* Viar submitted bid requests to the laboratories and awarded the contract to the lowest bidder. *Id.*

237. While at QAMS, Mr. Huetteman supervised Viar. *Id.* at 586-87. Mr. Huetteman specifically remembered the CLP laboratories that worked on the B & B sampling: Associated Labs, Enesco Corporation, S-Cubed, Weyerhaeuser Analytical, and Datachem Lab. *Id.* EPA received bills directly from these labs. *Id.* at 587. EPA's SCORES computer summary shows that EPA paid $497,482.46 to these laboratories for

sampling analysis at the Site. Ex. G-10, Vol 1, Section 1, at 1; Vol 27, Section 1, at 1.

238. ICF Technology was another contractor that supported QAMS' analytical services. *Id.* at 588. ICF provided quality assurance and quality control support for the Superfund program. *Id.* at 588. ICF provided chemists and other experts to review the raw laboratory data to ensure that laboratory analysis was proper. *Id.* Mr. Huetteman supervised their work as well. *Id.* He assigned work to them and reviewed the work product. *Id.* ICF sent invoices to the work assignment manager, who was Mr. Huetteman's immediate supervisor. *Id.* at 589. The work assignment manager reviewed the invoices with input from Mr. Huetteman to make sure that the work was done properly. *Id.* The ICF contracts were national contracts dedicated to EPA work. *Id.* EPA's SCORES computer summary shows that EPA paid $543,719.51 to ICF Technology, Inc. for review of sampling plans and review of laboratory results from other laboratories for the Site Assessment and RI/FS. Ex. G-10, Vol 1, Section 1, at 1.

AA. *EPA Selected the Interim Remedy According to the NCP.*

239. Ms. Wetmore testified that in weighing the remedial alternatives and selecting the remedial action, she balanced the nine criteria in the NCP, including overall protection of human health and environment and compliance with ARARs. *Id.* at 2149-50. The nine criteria against which remedial alternatives under consideration should be weighed are: (1) overall protection of human health and the environment; (2) compliance with applicable or relevant and appropriate requirements (ARARs); (3) long-term effectiveness and permanence; (4) reduction of toxicity, mobility or volume through treatment; (5) short-term

effectiveness; (6) implementability; (7) cost; (8) state acceptance; and (9) community acceptance. 40 C.F.R. § 300.430(e)(9)(iii)(A)-(I). Not all nine criteria are given equal weight. Instead, they are divided into three classifications: threshold criteria, primary balancing criteria, and modifying criteria. Under this structure," [o]verall protection of human health and the environment and compliance with ARARs (unless a specific ARAR is waived) are threshold requirements that each alternative must meet in order to be eligible for selection." 40 C.F.R. § 300.430(f)(1)(i)(A). EPA explains in the preamble to the NCP that remedial alternatives "must be demonstrated to be protective ... in order to be eligible for consideration in the balancing process by which the remedy is selected." 55 F.R. 8726 (1990). The NCP provides: "Each remedial action shall be cost-effective, provided that it first satisfies the threshold criteria set forth in § 300.430(f)(1)(ii)(A) and (B)." *Id.; see also* 55 F.R. 8727 (1990).

240. The primary focus of the RI/FS was groundwater contamination. *Id.* at 572. EPA concluded that the geologic formation that caused the A-zone groundwater to perch was not necessarily widespread. *Id.* at 610. The A-zone diminished south of the site. *Id.* Although the A-zone had a limited definition, the B-zone was a regional feature that extended to the Arvin well. *Id.* EPA concluded a threat existed that the plume of contamination that originated from the B & B site would reach the Arvin City well by moving from the A-zone to the B-zone, where it could eventually contaminate the Arvin well. *Id.* at 610-12.

241. Based on preliminary data, EPA determined that the flow direction of the B-zone from the southern part of the B & B site was in a southern to southwest direction. *Id.* at 612. The exact flow direction of the B-zone groundwater was not critical to the issue of risk to

the Arvin City well, because a contaminant plume can expand and diffuse perpendicular to its axis. *Id.* at 612-13. As the B-zone plume potentially expanded, it could intercept the Arvin City well even if the groundwater flow was not directly towards that well. *Id.* at 613.

242. Groundwater was the main focus of the RI for another reason. The B-zone aquifer itself was a potential drinking water source. *Id.* at 572-73. EPA's mission is to protect all current and potential sources of drinking water, and groundwater is included in the statutory term "environment." *Id.* at 750. Under California law potential drinking water sources include groundwater having total dissolved solids (tds) below 3,000 and the capacity to be pumped at a rate of 150 gallons a day. *Id.* at 622-23. The B-zone meets both criteria. *Id.* at 622. The B-zone groundwater qualified as a potential source of drinking under California law. *Id.* at 618.

243. Because under State law the B-zone was a potential drinking water source, EPA treated this as an ARAR pursuant to Section 121(d) (2)(A) of CERCLA, 42 U.S.C. § 9621(d)(2)(A). *Id.* at 619-20, 573. The State's antidegradation policy, requiring the protection of all drinking water in the State, was treated as an ARAR. EPA attempted to protect the B-zone water to comply with this ARAR. *Id.*; Wetmore at 258. The preamble to the National Contingency Plan and a 1986 policy document referenced in the preamble direct EPA to protect potential drinking water sources. Huetteman at 573, 637-38. This was consistent with the NCP.

244. EPA had no evidence that any particular person was using the B-zone groundwater, but where groundwater resources are depleted, as throughout the Central Valley of California over the next 10 to 20 years time frame, it was realistic to believe that a

resident would attempt to draw water from the B-zone, particularly since drinking water wells are common in the area. *Id.* at 668.

245. The main threat to the B-zone was very high concentrations of contamination in the A-zone groundwater. *Id.* at 573, 575. There is an identified connection between the A and B zones, because the B-zone is contaminated. *Id.* EPA had already observed B-zone contamination at concentrations well above standards set for drinking water sources, the Maximum Contaminant Levels ("MCLs") under the Safe Drinking Water Act. *Id.* at 573.

246. EPA detected 1,2-DCP at approximately 1200 parts per billion (ppb), greatly in excess of the MCL of 5 ppb. *Id.* at 748. EPA believes A-zone contamination is a source, *id.* at 582, and presents the risk that the single plume of contamination under the B & B plant will migrate into the B-zone. Wetmore at 2087, 2098; Huetteman at 573 733, 749.

247. EPA selected an interim extraction and treatment remedy for the A-zone based on this priority. Huetteman at 582. EPA intended to follow the A-zone interim remedy and then do further work on the B-zone. *Id.* at 582, 682. EPA did not need to perform a remedial investigation of the B-zone before the A-zone remedy. Huetteman at 613. EPA knew that the B-zone qualified as a potential source of drinking water and that it was contaminated above MCLs. *Id.* at 613, 2114.

248. To determine the cleanup level for the A-zone, Mr. Huetteman used fate and transport models to determine what concentration level in the A-zone would no longer pose a threat to the B-zone. *Id.* at 574. Modeling indicated a range of 10 to 100 times the MCL for A-zone contaminants would protect the B-zone. *Id.*

at 574-75. The cleanup goal for the A-zone for EDB, DBCP, 1,2-DCP, 1,2,3-TCP and dinoseb was set at 10 to 100 times the MCL. These are the principal chemicals of concern in the A-zone. *Id.* at 575. EPA recognized there was some uncertainty but anticipated that the B-zone investigation would provide more data, and Site cleanup goals could be refined. *Id.*

249. EPA selected a cleanup level of 80 parts per million for the first 7 feet of the sub-surface soil to address dinoseb contamination. *Id.* at 65-52. Because dinoseb is not volatile, it was the only chemical that remained on the surface soils. Dinoseb presented potential health risks based on human exposure to surface soils. *Id.*

250. EPA performed a risk assessment calculation to determine the cleanup levels that relied on a risk assumption protocol developed for the RCRA program. *Id.* at 652-54.

251. EPA did not perform a risk assessment for the A-Zone because there were no receptors for the A-zone groundwater. *Id.* at 2146. A risk assessment was not necessary for the B-zone, because the MCLs under the Safe Drinking Water Act were used as risk-based goals for the B-zone. *Id.* at 2146. CERCLA expressly directs EPA to attain MCLs where they are relevant and appropriate. 42 U.S.C. § 9621(d)(2)(A). Here, the MCLs established the risk level for the B-zone groundwater. Wetmore at 2146-47, 2150.

BB. *The Remedy*

252. The selected remedy includes extraction of the contaminated groundwater and treatment with UV/Oxidation to destroy the contaminants. Huetteman at 576. Such treated groundwater then is reinjected into the A-zone. *Id.* This type of remedy is

a fairly common remedy for groundwater contamination. *Id.*

253. The remedy also calls for paving-over the entire site and placing a RCRA cap over the sump and the pond. *Id.* The State RCRA regulations were deemed to be ARARs. These regulations, if otherwise *applicable*, would have required such closure. *Id.* The paving of the site was primarily to control surface water drainage, which had been a problem at the Site. *Id.* at 576-77. Paving will reduce the infiltration of rainwater, to deter further transport of contaminants within the subsurface. *Id.* at 577. Areas where dinoseb contamination was particularly high were to be excavated, moved to the sump, and put under the RCRA cap. *Id.*

254. In response to comments from the Railroads, EPA decided not to use the UV treatment system and instead selected a granulated activated carbon ("GAC") treatment system which removed the contamination from the water for offsite disposal. *Id.* at 607. After the GAC system was selected, however, a dual phase extraction methodology was adopted that included extraction of vapor released from the contaminated water. *Id.*; Wetmore at 2157; Kueper at 3865.

255. EPA's intent was to slowly phase in the extraction wells to learn from experience and optimize the extraction system. Huetteman at 583; Cain at 1396. Characterization of a site often continues past the Record of Decision into the design and remedial action phases, and the B & B Site was no exception. Huetteman at 583. EPA intends to continue to collect additional data and gain experience from installing the system on a small scale. *Id.*

256. If the phased wells showed that the extraction system did not work, EPA was not rigidly locked into

that remedy. *Id.* at 583-84. EPA contemplates that additional measures might be necessary in connection with the final remedy that would include the B-zone. *Id.* at 584. Additional flexibility exists because remedies are reviewed every five years and can be changed based on technical merits, or as new information or technologies develop. *Id.* at 624-25.

CC. *EPA's Accounting System Provides an Accurate Accounting: Railroads' Objections*

257. The Integrated Financial Management System, IFMS, is EPA's computerized accounting system. Testimony of Charles Young ("Young") at 1269, 1275. Mr. Young is an expert in EPA accounting.

258. All budgetary and financial transactions are entered into the IFMS. *Id.* at 1270. The amount that is originally authorized and obligated for each contract is entered into the computer. As work proceeds under the contract, the contractor sends invoices to EPA which are reviewed by work assignment managers, who supervised the work. *Id.* at 1271-72; *see, e.g,* Wetmore at 251; Huetteman at 589. A contract project officer, after any necessary consultation with work assignment managers, approves and forwards the contractor's invoice for payment to EPA's office in Research Triangle Park, North Carolina. Each transaction is entered into the IFMS computer system. *Id.* at 1272. Each Superfund transaction is identified with a Site/Spill ID number. *Id.* at 1270. Contractor payments are entered into the system as they are paid. *Id.*

259. On a nightly basis, the IFMS computer system prepares a treasury schedule instructing the Department of the Treasury to make electronic fund transfer payment of the invoices from EPA contractors. *Id.* at 1273. The IMFS necessarily

records only paid data. If a transaction is not entered into IFMS, then a treasury schedule cannot be generated authorizing the payment. *Id.* at 1273. The Department of the Treasury sends back confirmations of payment to EPA and EPA reconciles the confirmations with the information in the computer on a monthly basis. *Id.* EPA also enters time sheet entries for EPA employees every two weeks according to the Site/Spill ID number. *Id.* at 1271.

260. "SCORES" stands for the Superfund Cost Organization Reporting System. SCORES is a DOS based computer program that retrieves information out of IFMS about specific sites based on the Site/Spill ID number. *Id.* at 1275. Information for the SCORES report is downloaded from the IFMS. Testimony of Sharon Johnson, (April 15), at 1902 ("Johnson"); *Young* at 1275. The SCORES report summarizes EPA's costs in a readable and understandable manner, *id.* at 1281, to detail all transactions associated with a particular Superfund site. Young at 1275, 1281. The SCORES report documents EPA's total response costs, including both direct and indirect costs. Young at 1281-82, 1285.

261. A SCORES report is a snapshot of site costs that are paid as of a certain date. Volume 1 of Exhibit G-10 is a SCORES report for site spill identifier 09-H2 for the Site. Charges made in the SCORES system after that date appear in subsequent SCORES reports. Johnson at 1975-76. The annual allocation rates for particular contracts and indirect cost rates are also entered into the SCORES computer system. Young at 1282.

262. EPA places a bar code on each paper document relating to payment of costs and scans the documentation into the Superfund Cost Recovery Image Processing System ("SCRIPS"). The bar code number is entered into IFMS. Young at 1257, 1358.

For a cost package, EPA retrieves the documents scanned into SCRIPS by Site/Spill ID Number. Young at 1275, 1358. The SCORES report in evidence accurately summarizes the documentation showing that EPA has incurred costs, such as the invoice, the site specific redistribution, the treasury schedules and time sheets. Young at 1353, 4262.

263. An entry on a SCORES report proves that the cost has been paid, because SCORES only summarizes paid costs that are included in IFMS. *Id.* at 1358.

264. In addition, EPA has a system of internal controls to review contract invoices before any contractor invoice is paid. *Id.* at 1276-77. EPA builds into each of its contracts a spending or hour limitation on the work that is requested and performed. *Id.* at 1296-98. Budgets are prepared and technical direction documents are issued to define the scope of any EPA project. Weden at 513, 528; Wetmore at 248; Young at 1270, 1276.

265. EPA monitors the work as it is performed. *Id.* at 4297-98. Work assignment managers, such as on-scene coordinators or remedial project managers, are on-site reviewing the progress of the work and the work product delivered by the contractors. Young at 1277. EPA project officers authorize payment of invoices after consultation with work assignment managers. Young at 1272, 1274, 1277-78, 1342.

266. EPA conducts incurred-costs audits over the life of a contract and closeout audits at the expiration of the contract. If a contractor charge is at variance with the contract terms, the charge will be disallowed and not paid by EPA. *Id.* at 1328, 1356. The cost recovery packages contain reconciled invoice amounts for any costs incurred by EPA. *Id.* at 1273-74, 1391.

267. All SCORES and related reports for the Arvin Site conform to EPA accounting policies and procedures.

DD. *Internal EPA Indirect Costs Are Recoverable.*

268. Certain EPA internal costs can be accounted for on a site specific basis and are identified as direct costs. Young at 1288. EPA internal direct costs include the costs such as regional payroll costs, the headquarters payroll costs, the regional travel costs, and the headquarters travel costs. Young at 1286-87.

269. Other EPA internal costs, by their nature, cannot be accounted for on a site-specific basis but are necessary for the operation of the Superfund program and support site specific cleanup efforts. These are called indirect costs. Indirect costs are costs that benefit all EPA programs, such as the EPA's personnel office or computer center, a portion of which are allocated to all EPA regions. Young at 1288-89.

270. Because indirect costs benefit programs other than Superfund, an indirect cost rate is applied based on the percentage of benefit to the Superfund program. *Id.* The indirect cost rate identifies the costs of running the entire Superfund program. *Id.* at 1288.

271. For example, the indirect costs of running an EPA personnel office are allocated based on the number of EPA employees working in the Superfund program in relation to all other EPA employees not in Superfund. *Id.* at 1288-89. EPA computer center costs are allocated based on the amount of time that the Superfund employees use computer time compared to other EPA offices. *Id.*

272. EPA's indirect costs are computed in accordance with a methodology developed and recommended by the accounting firm Ernst & Whinney, now Ernst & Young, *id.* at 1287-88, that

provides guidance on procedures necessary for a cost allocation system and specific steps EPA should take in implementing a cost allocation system. Young at 1287. EPA calculates indirect costs according to this methodology. *Id.*

273. Indirect rates are recalculated annually and entered into IFMS and SCORES, to include these costs in a SCORES report. Young at 1282. For each Site, the indirect rate is multiplied by the number of employee hours recorded at that site, generating the total indirect costs for the site. In the case of the B & B Arvin Site, EPA's SCORES summary shows that EPA allocated indirect costs were $1,351,558.90. Ex. G-10, Vol 1, Section 1, at 1.

EE. *Specific Contractor Costs Are Properly Allocated According to EPA's Annual Allocation Procedure.*

274. In order for EPA to effectively respond to releases and threatened release of hazardous substances, EPA relies on EPA dedicated contractors such as E & E under the Technical Assistance Team ("TAT") contract. Young at 1297, 4297; *see, e.g.*, Huetteman at 589; Wetmore at 245-46. EPA generally contracts to pay for a large number of contractor employee hours and as the work progresses, the contractors invoice EPA, breaking down the costs among several sites. Young at 4249, 4297. Although contractors work on a number of sites, EPA may request work from these contractors that does not occur at or in relation to a specific site, but which nonetheless supports the dedicated contract and site response activities under the contract. EPA allocates these costs to specific sites pursuant to an annual allocation procedure. Young at 1296-1203, 1309-10.

275. For example, if EPA requests E & E to train all employees that will work on TAT contract projects at the outset of the contract, those training costs do not occur at a specific site, but EPA could not perform any response activities if its TAT contractors were untrained. Such costs support the entire contract and benefit all sites subject to contract work. Young at 1313. If the TAT contract requires use of equipment, EPA may request the contractor to use some of the TAT employee hours to maintain all equipment, *id.* at 1297, even if a piece of equipment is not necessarily used at a particular site, equipment and maintenance costs are fairly allocated to all sites that require use of the dedicated contractor. *Id.*

276. Such a procedure is a standard cost accounting procedure. *Id.* at 1299. EPA allocates non-site specific contract dollars it incurs from its contractors accordingly. Young at 1283-84. EPA's annual allocation procedures are designed to identify effectively which costs are appropriate to allocate to Superfund sites, to assure that the costs are allocated among the various sites in a reasonable way, in accordance with EPA accepted cost accounting principles. This results in identifying nonsite dollars in the cost recovery process. *Id.* at 1335.

277. The principles which underlie EPA's annual allocation methodology are similar to those EPA has used to develop its indirect cost rate. *Id.* at 1296. Allocated costs are similar to indirect costs because they are real costs, but they cannot be easily broken down for a specific site. *Id.* at 1283. The annual allocation costs could be treated as indirect costs, but it is more accurate from an accounting perspective to distribute these costs to the sites subject to the dedicated contract, as opposed to all sites, whether related to the dedicated contract or not. *Id.* at 1283-84.

278. Annual allocation is not general overhead, because overhead costs are distributed among all invoices a company generates. Rather, annual allocation costs are contract specific. *Id.* at 1299-1300. They are tasks EPA has asked a contractor to perform to support a dedicated contract. *Id.* For example, if EPA requests a dedicated contractor to provide management services for a particular national contract, these program management costs are properly allocated to all sites that are subject to the contract in proportion to direct costs per site. Young at 1296, 1299-1300.

279. EPA allocates non-site specific contract dollars that it pays its contractors in support of site cleanup only, to the sites on which that contractor has worked. *Id.* at 1284.

280. The annual site allocation amount is based upon an objective formula set forth in a guidance document prepared by EPA for its contractors. *Id.* at 1284-85. Each contractor follows EPA guidance to determine which costs are subject to annual allocation. *Id.* at 1285. The contractors' annual allocation reports are reviewed by EPA. *Id.* at 1302.

281. The allocation process results in a determination of a national, regional, and site-specific allocation rate, per contract. Multiplying the rate by the direct site amount billed by the contractor yields each Superfund site's share of the non-site-specific costs charged to EPA by the contractor. Provisional annual allocation rates are established to determine allocable costs when a final rate has not been established. Young at 1283, 1196-1303.

FF. *EPA's Cost Package Documents its Costs*

282. The Railroads made a wholesale attack on EPA's cost and allocation methodology, ignoring well-

established legal precedent that has validated EPA CERCLA cost documentation procedures and practices. The Railroads' cost recovery expert witness was neither credible nor persuasive. He attempted to apply general cost accounting principles in a manner that was not helpful and resulted in unnecessary expenditure of time.

283. Governments' Exhibit G-10 is the final enforcement cost package prepared by EPA Region IX for the B & B Arvin Superfund site. Johnson at 1909. The EPA process that produced the total dollar figure shown on the SCORES report provides an accurate accounting of the costs incurred by EPA on the B & B Arvin Superfund site for site spill identifier number 09-H2 at that time. *Id.* at 1995-96.

284. The same procedures used to prepare the cost package for site spill identifier 09-H2 were used to prepare the cost package for site spill identifier number 09-W4, which summarizes the RI/FS costs. *Id.* at 1997.

285. The RI/FS SCORES report and related cost package represent an accurate and reliable accounting of the $963,590.25 dollar amount, which represents the costs associated with site spill identifier 09-W4. *Id.* at 2009-10. There is sufficient documentation in the cost package and the site file to support the costs set out in the SCORES reports for both site spill identifier numbers 09-H2 and 09-W4. *Id.* at 2010.

286. For cost recovery purposes, contractor invoices are used to show how much EPA was charged for activities at a particular Superfund site, and treasury schedules are used to show how much EPA paid for activities at a particular Superfund site. No other documents are needed to make these determinations. However, the information is provided

in summary form in the SCORES Report. Young at 4253.

287. In connection with EPA's response actions, EPA has paid the following contractors the following amounts as of June 30, 1997: (1) $31,239.55 to ATSDR for the preliminary health assessment; (2) $409,086.21 to Weston through EPA's Emergency Response Team, for work related to the Site Assessment and dinoseb removal; (3) $2,043,133.36 to E & E and $34,190.48 to Roy F. Weston for assistance in the Site Assessment under TAT contracts; (4) $7,214.62 to E & E for operation of an onsite laboratory during the Site Assessment; (5) $541,525.31 to CET for the technical and logistical support relating to the excavation and soil washing of the dinoseb hot spot; (6) $229,111.09 to E & E under a TAT contract for work relating to the dinoseb removal; (7) $23,995.00 to Solarchem Environmental Systems for work related to the dinoseb removal; (8) $543,719.51 to ICF Technology, Inc. for review of sampling plans and review of laboratory results from other laboratories for the Site Assessment and RI/FS; (8) $55,911.86 to Lockheed Environmental Systems and Technology for a seismic investigation; (9) $650,265.89 to E & E pursuant to the ARCS contract for assistance in the RI/FS and the remedial action; (10) $481,217.74 and $41,115.74 to the Army Corps of Engineers for the remedial design; (11) $497,482.46 for various laboratories for sampling analysis; (12) $155,410.30 to the State of California for assistance and oversight; (13) $15,960.48 to Planning Research Corporation for an investigation into potentially responsible parties; and (14) $4,326.56 to Armstrong Data Services and $7,338.32 to Labat Anderson for document management at EPA. In addition, EPA payroll costs as of June 30, 1997 were $551,091.58. EPA has attributed $1,351,558.90 in

indirect costs to these response actions. In total, EPA has spent at least $7,809,683.46 as of June 30, 1997, analyzing and remediating the Site, not including interest, for response actions in connection with the B & B Arvin facility. *See* Ex. G-10, Vol 1, Section 1, at 1-2, Vol 27, Section 1, at 1-2.

287A. The Railroads, Shell, and DTSC have stipulated that as of March 31, 1998, DTSC had incurred response costs of $401,872.81, and additional costs of $6,171.73 in interest, which DTSC contends is required to be recovered by California Health & Safety Code section 25360.1. The interest has been calculated in accordance with the factors set forth in Health & Safety Code section 25360.1, however, the Railroads and Shell reserve the right to challenge DTSC's recovery of this interest as a matter of law.

GG. *Recoverability of the Railroads' Response Costs*

287B. In October, 1991, EPA issued Administrative Order 91-6 pursuant to CERCLA section 106 requiring the Railroads to perform specified investigative and remedial tasks. The Railroads hired environmental consultants and incurred costs in connection with the investigation of the sources of the contamination. Shell has not received any administrative orders and has not incurred any response costs in connection with Arvin. Pretrial Order, Undisputed Fact 24; Ex. 313.

287C. The Railroads retained Kennedy/Jenks ("K/J") to assist them in complying with Order 91-6. K/J submitted a work plan which was later accepted and approved by EPA. Wetmore at 254:6-255:9, 2076:15-2078:20 (approved plan and accepted changes in location of wells); Testimony of Sarah Bartling at 4138:15-24; Ex. 3013-3015.

287D. Part I of the work plan performed by K/J consisted of constructing a berm around the entire Arvin site, repairing fencing and maintaining site security, including posting warning signs around the perimeter of the site, and surveying the site for purposes of installing groundwater wells. Ex. 3013; Bartling at 4139:11-4141:14.

287E. Part II of the work plan performed by K/J was to evaluate the distribution of chemicals in soils and groundwater and the site lithology in order to assess where to place and how to design the required groundwater wells. Although soil sampling and groundwater testing were not specifically called for in the EPA's Order, such activities were reasonably necessary to ensure the safety of K/J's workers and the proper placement and design of the wells. Ex. 3014; Bartling at 4141:15-4144:15, 4178:4-4179:21; Kalinowski at 3503:25-3512:14.

287F. During the third and last phase of its work, K/J drilled, installed and developed groundwater monitoring wells along with sampling pumps. Bartling at 4145:7-16, 4177:7-18.

287G. The Railroads cooperated with the EPA and complied with Order 91-6. Wetmore 254:6-255:9, 2070:20-2071:3, 2078:18-20; Bartling at 4153:18-20; EPA certification, Ex. 3015.

287H. K/J provided the data it collected to the EPA. EPA incorporated the geological data gathered by K/J into the RI/FS, and it also reviewed the groundwater data at least to determine if it was consistent with EPA's prior conclusions. Huetteman at 734:7-23; Wetmore at 2091:13-16; Bartling at 4146:10-17.

287I. EPA also reviewed the soil data to help fill in data gaps and to increase its confidence in the selection

of locations for the groundwater wells. Wetmore at 2079:9-2080:5.

287J. Many of the borings K/J drilled, such as CA-21, CA-25, CA-22 and CA-24, were placed along the anticipated groundwater gradient. Bartling at 4147:20-25. K/J also drilled eight borings (S16A, S19A, S21A, CA16, CA19, CA20, CA26, CA27) and took samples primarily to confirm or dispute the accuracy of the EPA's sampling results. Bartling at 4151:3-17, 4152:24-4153:17; Ex. 3032.

287K. The Railroads paid K/J $3,057,700 for their work at Arvin. Ex. 3032; Ex. 3012; Bartling at 4157:3-9. Of this, some $450,382 represents the cost of installing berming and fencing around the Railroad property ($11,292) and of drilling the eight borings placed primarily in order to determine the Railroads' potential liability ($439,090). Such costs are reasonably apportionable to the Railroads. Ex. 3032; Kalinowski at 3515:11-3518:17. The balance of the Railroads' costs, $2,607,318, relate to the groundwater investigation and to the B & B Property. Such costs were necessary to respond to the EPA's order, and were consistent with the NCP. The costs compare favorably to the costs incurred by the EPA in connection with the drilling work EPA undertook at this site, and were reasonable. Kalinowski at 3500:4-3503:24, 3512:10-14; Ex. 3011, 3012, 3032.

IV. CONCLUSIONS OF LAW

A. *Jurisdiction and Venue*

288. The Court has jurisdiction over this matter under 28 U.S.C. §§ 1331, 1345.

289. Venue is proper in this district pursuant to 28 U.S.C. § 1391(b) and (c) and 42 U.S.C. § 9613 because the claims arise, and the releases of hazardous

substances occurred at the Site located in the Eastern District of California, Fresno Division.

290. The DTSC makes its claims under sections 107 and 113 of CERCLA, 42 U.S.C. §§ 9607, 9613.

B. *CERCLA Generally*

291. CERCLA is a broad, remedial statute enacted by Congress in order to enable the EPA to respond quickly and effectively to hazardous waste spills that threaten the environment, and to ensure "that those responsible for any damage, environmental harm, or injury from chemical poisons bear the costs of their actions." S.Rep. No. 848, 96th Cong., 2d Sess. 13 (1980), U.S.Code Cong. & Admin. News 1980, 6119, reprinted in 1 CERCLA Legislative History at 320. Under CERCLA, the EPA is authorized to undertake remedial efforts to clean up hazardous waste spills and, where an "imminent and substantial endangerment to the public health exists," to take legal action in order to compel potentially liable parties to undertake their own private clean-up efforts. *See B.F. Goodrich v. Murtha*, 958 F.2d 1192, 1197 (2d Cir.1992); 42 U.S.C. § 9606(a).

292. In enacting CERCLA, Congress established four groups of responsible parties, all of whom are liable regardless of intent, subject to a limited number of narrowly construed defenses to CERCLA liability. *See* 42 U.S.C. § 9607(a) and (b).

293. Responsible parties generally include (1) *generators* of hazardous waste; (2) present or past *owners* at the time of disposal of facilities where hazardous wastes are disposed of; (3) *transporters* of hazardous wastes, and (4) *arrangers*, those who arrange for the disposal or transport of hazardous waste. *See* 42 U.S.C. § 9607(a) (emphasis added); *Murtha*, 958 F.2d at 1198; *Florida Power & Light Co.*

v. Allis Chalmers Corp., 893 F.2d 1313, 1317 (11th Cir.1990).

294. Through this scheme of liability. Congress envisioned a system that would permit the EPA to recoup its costs from a source of funds other than the taxpayers. It was Congress' intent that CERCLA be construed liberally to accomplish these goals. *See Murtha*, 958 F.2d at 1198.

C. *Elements of Liability*

295. To establish a prima facie case of CERCLA liability, a plaintiff must show that (1) the defendant is a responsible party as defined by section 9607(a)(1)-(4); (2) that the site at issue is a "facility" as defined by section 9601(9); (3) that there has been a release of hazardous substances at the facility or that such a release is threatened; and (4) that the Government incurred costs which are not inconsistent with the National Contingency Plan ("NCP") in responding to the release. *See Murtha*, 958 F.2d at 1198; *Cose v. Getty Oil Co.*, 4 F.3d 700, 703-04 (9th Cir.1993); *Kaiser Aluminum & Chem. Corp. v. Catellus Dev. Corp.*, 976 F.2d 1338, 1340 n. 4 (9th Cir.1992); *3550 Stevens Creek Assocs. v. Barclays Bank of California*, 915 F.2d 1355, 1358 (9th Cir. 1990), *cert. denied*, 500 U.S. 917, 111 S.Ct. 2014, 114 L.Ed.2d 101 (1991); *Ascon Props., Inc. v. Mobil Oil Co.*, 866 F.2d 1149, 1152-53 (9th Cir.1989); *United States v. Aceto Agric. Chems. Corp.*, 872 F.2d 1373, 1378-79 (8th Cir.1989); *United States v. Iron Mountain Mines, Inc.*, 812 F.Supp. 1528, 1536-37 (E.D.Cal.1992).

D. *CERCLA Defenses*

296. Inconsistency with the NCP or definitional exclusions, are deemed statutory "exemptions" on which a defendant bears the burden of proof. See *Idaho v. Hanna Mining Co.*, 882 F.2d 392, 396 (9th

Cir.1989); *In re Acushnet River & New Bedford Harbor Proceedings*, 716 F.Supp. 676, 687 n. 19 (D.Mass.1989); *see also United States v. First City Nat'l Bank of Houston*, 386 U.S. 361, 366, 87 S.Ct. 1088, 18 L.Ed.2d 151 (1967).

297. Courts also allow defendants to attempt to limit liability by apportionment of the harm, but apportionment should not be the equivalent of a complete defense as enumerated in Section 107(b) of CERCLA. *See Matter of Bell Petroleum Servs. Inc.*, 3 F.3d 889, 896 (5th Cir.1993) (noting that apportionment under Restatement only limits liability and does not operate as complete defense); *United States v. Northernaire Plating Co.*, 670 F.Supp. 742, 748 (W.D.Mich.1987) (apportionment of zero based on lack of any causation conflicts with third party defense), *aff'd, United States v. R.W. Meyer, Inc.*, 889 F.2d 1497, 1507-08 (6th Cir.1989) (adopting reasoning of district court), *cert. denied*, 494 U.S. 1057, 110 S.Ct. 1527, 108 L.Ed.2d 767 (1990); *Weyerhaeuser Co. v. Koppers Co., Inc.*, 771 F.Supp. 1420, 1425-26 (D.Md.1991) (apportionment is not a substitute for third party defense); *accord United States v. Pretty Products, Inc.*, 780 F.Supp. 1488, 1499 & n. 14 (S.D.Ohio 1991) (allowing defendant to avoid liability because of plaintiff's failure to prove causation is inconsistent with third party defense); *Lincoln Props., Ltd. v. Higgins*, 823 F.Supp. 1528, 1536-37 (E.D.Cal.1992) (CERCLA definition should not be applied to amount to end-run around third party defense); *United States v. Fairchild Indus., Inc.*, 766 F.Supp. 405, 411 (D.Md.1991) ("defenses" that are almost the same as third party defense not allowed); *cf. Rohm & Haas Co.*, 2 F.3d 1265, 1280 (3d Cir.1993) (stating that case may arise where zero share apportioned, but because defendant could not establish that it was not source of

contamination under third party defense, no need to reach question).

298. The third party defense issue is briefed on page 97 of this Memorandum Decision.

E. *"FACILITY"*

1. *The B & B Arvin Plant is a "Facility"*

299. Section 101(9) of CERCLA, defines a "facility" as:

> (A) any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft, or (B) any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located ....

42 U.S.C. § 9601(9).

300. CERCLA's definition of "facility" suggests several different concepts or applications. First, a facility can be a container-like object that is the source of a release or threatened release such as a "pipe," "rolling stock" or a "storage container." *See Amcast Indus. Corp. v. Detrex Corp.*, 2 F.3d 746, 750 (7th Cir. 1993), *cert. denied*, 510 U.S. 1044, 114 S.Ct. 691, 126 L.Ed.2d 658 (1994) (tanker truck that leaked onto property to be remediated was "facility"); *Reading Co. v. City of Philadelphia*, 155 B.R. 890, 906-07 (E.D.Pa. 1993) (city liable as owner/operator of railroad cars that leaked PCB onto area that was to be remediated); *United States v. Bliss*, 667 F.Supp. 1298, 1303, 1305, 1307 (E.D.Mo. 1987) (defendant liable under § 107(a)(1) because he owned trucks from which hazardous waste was sprayed onto the ground and defendant liable under § 107(a)(2) because he owned the property at the time hazardous wastes were disposed of there).

301. A facility can be a geographic area that is the source of a release or threatened release such as a "landfill," a "pit" or a "lagoon." *See Dedham Water Co. v. Cumberland Farms Dairy*, Inc., 889 F.2d 1146, 1148, 1154 (1st Cir. 1989) (area that was source of water contamination); *NutraSweet Co. v. X-L Eng'g Corp.*, 933 F.Supp. 1409, 1415 (N.D.Ill. 1996) (hazardous substances released on property migrated to and contaminated neighboring property as a result of groundwater flow; source of contamination was facility or location where contaminants spread on both facilities); *United States v. A & N Cleaners and Launderers, Inc.*, 854 F.Supp. 229, 231-32, 240-43 (S.D.N.Y. 1994) (purchaser of property that was source of groundwater contamination liable; no innocent owner defense); *Bliss*, 667 F.Supp. at 1303, 1307 (defendant liable under 107(a)(1) because he owned trucks from which hazardous waste was sprayed onto the ground and under § 107(a)(2) because he owned the property where hazardous wastes were disposed of); *See Artesian Water Co. v. Gov't of New Castle County*, 659 F.Supp. 1269, 1280-84 (D.Del.1987), *aff'd*, 851 F.2d 643 (3d Cir.1988) (defendant liable under § 107(a)(1) because it owned landfill from which hazardous waste leached into aquifer); *see also United States v. CDMG Realty Co.*, 96 F.3d 706 (3d Cir.1996) (CERCLA release contemplates gradual spreading of contamination such as leaching of contaminants at landfill).

302. A facility can be the geographic area wherever a hazardous substance "has come to be located" by passive spreading such as groundwater migration, surface runoff, wind dispersal, or by active human channeling or direction. *NutraSweet Co.*, 933 F.Supp. at 1415, 1417-18 & n. 3, 1420 (hazardous substances released at property migrated to and contaminated

neighboring property as a result of groundwater flow; source of contamination was facility or both properties were facility); *Mead Corp. v. United States,* 1994 WL 733567, at *3 (S.D.Ohio January 14, 1994) (entire contaminated aquifer that extended over a wide area was a facility); *United States v. Ward,* 618 F.Supp. 884, 892, 895 (D.C.N.C.1985) (210 miles of road contaminated by active spraying); *United States v. Metate Asbestos Corp.,* 584 F.Supp. 1143, 1148-49 (D.Ariz.1984) (wind dispersal of asbestos at mobile home park).

303. A facility can consist of a general geographic area (a "site") within which there has been some storage or placement of a hazardous substance, such as a general plant area where different waste streams, spills and incidents historically have led to contamination in different areas. *See, e.g., Redwing Carriers, Inc. v. Saraland Apartments,* 94 F.3d 1489, 1494, 1510 (11th Cir.1996); *FMC Corp. v. United States Dep't of Commerce,* 29 F.3d 833, 835-36 (3d Cir.1994); *Bancamerica Commercial Corp. v. Trinity Indus.,* 900 F.Supp. 1427, 1435-37 (D.Kan.1995), *aff'd in part and rev'd in part on other grounds,* 100 F.3d 792 (10th Cir.), *amended,* 103 F.3d 80 (10th Cir. 1996); *Gopher Oil Co. v. Union Oil Co. of California,* 757 F.Supp. 988, 990, 992-94 (D.Min.1990), *aff'd and remanded,* 955 F.2d 519 (8th Cir.1992); *United States v. Northernaire Plating Co.,* 670 F.Supp. 742, 744-46 (W.D. Mich.1987), *aff'd sub nom. United States v. R.W. Meyer, Inc.,* 889 F.2d 1497 (6th Cir.1989), *cert. denied,* 494 U.S. 1057, 110 S.Ct. 1527, 108 L.Ed.2d 767 (1990); *Metate Asbestos Corp.,* 584 F.Supp. at 1148-49.

304. The contamination within a geographic facility need not be continuous. *United States v. Colorado & Eastern R.R. Co.,* 50 F.3d 1530, 1533 (10th Cir.1995) (facility expanded to include additional parcel); *Akzo*

Coatings Inc. v. Aigner Corp., 960 F.Supp. 1354, 1358-59 (N.D.Ind.1996), *aff'd in part and vacated in part*, 197 F.3d 302 (7th Cir.1999) (five separate areas); *Plaskon Elec. Materials v. Allied Signal*, 904 F.Supp. 644, 650, 653, 670 (N.D.Ohio 1995) (four separate areas); *United States v. American Color & Chem. Corp.*, 885 F.Supp. 111, 112-13 (M.D.Pa.1995) (after work commenced, contamination discovered throughout facility); *Northwestern Mutual Life Ins. Co. v. Atlantic Research Corp.*, 847 F.Supp. 389, 396 (E.D.Va.1994) (all quadrants).

305. The scope of a geographic facility is not limited by the fiction of property lines because releases and migration of hazardous substances do not respect man-made ownership lines. *See United States v. Rohm and Haas*, 2 F.3d 1265, 1279 (3d Cir.1993) ("A current owner of a facility may be liable under § 107 without regard to whether it is the sole owner or one of several owners."); *accord Southern Pac. Transp. Co. v. Voluntary Purchasing Groups, Inc.*, 1997 WL 457510, *8 (N.D.Tex. August 7, 1997); *Clear Lake Props.*, 959 F.Supp. at 768; *United States v. Shell Oil Co.*, 841 F.Supp. at 970; *Louisiana-Pacific Corp.*, 811 F.Supp. at 1431; *Stringfellow*, 661 F.Supp. at 1059; *see also Ohio v. EPA*, 997 F.2d at 1549.

306. EPA need not designate one facility per owner or otherwise prove that an owner owns an entire facility to establish liability under Section 107 of CERCLA. *Id.; Rohm and Haas*, 2 F.3d at 1268. CERCLA expressly contemplates that there can be more than one owner of a facility. *See* 42 U.S.C. § 9608(b)(4). Section 108(b)(4) dealing with financial responsibility states:

> Where a facility is owned or operated by more than one person, evidence of financial responsibility covering the facility may be established and

> maintained by one of the owners or operators, or, in consolidated form, by or on behalf of two or more owners or operators. When evidence of financial responsibility is established in a consolidated form, the proportional share of each participant shall be shown. The evidence shall be accompanied by a statement authorizing the applicant to act for and in behalf of each participant in submitting and maintaining the evidence of financial responsibility.

42 U.S.C. 9608(b)(4).

307. Courts do not necessarily defer to a defendant's suggestion as to the scope of a CERCLA facility, because a defendant will always define the facility narrowly to avoid liability. *See, e.g., Southern Pac. Transp. Co.*, 1997 WL 457510 at *4; *Clear Lake Props.*, 959 F.Supp. at 768; *Akzo Coatings*, 960 F.Supp. at 1359; *Louisiana-Pacific Corp.*, 811 F.Supp. at 1431; *Stringfellow*, 661 F.Supp. at 1059.

a. A defendant may argue, for example, that each specific drum is a facility (*i.e.*, a "storage container") rather than the *landfill* itself where drums were abandoned, with the intended result that the plaintiff be required to prove a release from a particular drum. *See, e.g., Louisiana-Pacific Corp.*, 811 F.Supp. at 1431 ("Beazer's theory [dividing facility] presumes a stricter causation analysis than this court has adopted."); *Akzo Coatings*, 960 F.Supp. at 1359 (rejecting suggestion that "every separate instance of contamination, down to each separate barrel of hazardous waste, could feasibly be construed to constitute a separate CERCLA facility").

b. Narrowly defining the facility in this manner is nothing more than an attempt to impose a causation requirement that is inconsistent with the liability provisions of Section 107(a) and the causation based

third party defense in Section 107(b). *Louisiana-Pacific Corp.*, 811 F.Supp. at 1431; *Pretty Prods.*, 780 F.Supp. at 1499 & n. 14; *see also Lincoln Props.*, 823 F.Supp. at 1536-37; *United States v. Fairchild Indus., Inc.*, 766 F.Supp. 405, 411 (D.Md.1991).

c. If anything, courts defer to a plaintiff's definition of the facility because the plaintiff is the master of its claim and should be allowed to allege or conceptualize the facility in any manner to suit liability, as long as the asserted definition falls within the very broad statutory definition. *See Louisiana-Pacific Corp.*, 811 F.Supp. at 1431 ("As the master of its complaint, Louisiana-Pacific has the discretion to formulate the legal theories [regarding the facility] on which it will base its claim."). This is particularly so because courts should apply the definition of "facility" expansively to further the remedial goals of CERCLA. *See California v. Blech*, 976 F.2d 525, 527 n. 1 (9th Cir.1992); *3550 Stevens Creek Assocs.*, 915 F.2d at 1360 n. 10.

A plaintiff's choice to define the "facility" is not without limits and a plaintiff could not allege that the entire country is a facility. *See Thomas v. FAG Bearings, Corp.*, 846 F.Supp. 1382, 1387 (W.D.Mo.1994), *reconsideration granted on other grounds*, 860 F.Supp. 663 (W.D. Mo. 1994).

d. Other courts address this concern by examining the scope of the plaintiff's response actions to help define the appropriate scope of a geographic facility. *See United States v. Northeastern Pharm. & Chem. Co.*, 810 F.2d 726, 743 (8th Cir.1986), *cert. denied*, 484 U.S. 848, 108 S.Ct. 146, 98 L.Ed.2d 102 (1987) (location where hazardous substances were disposed of and where government concentrated cleanup efforts was facility); *United States v. Ottati & Goss*, 694 F.Supp. 977, 984 (D.N.H.1988) (NPL listing of two sites for

unified response action determined facility), *aff'd in part and vacated in part*, 900 F.2d 429 (1st Cir.1990); *Akzo Coatings*, 960 F.Supp. at 1358-59 (noncontiguous areas were one facility because EPA treated them as such); *see also Nurad, Inc. v. William E. Hooper & Sons Co.*, 966 F.2d 837, 840-43 (4th Cir.1992) (state officials ordered closure of discrete area, which was limit of facility; uncontaminated parcels nearby operated by others not included in facility), *cert. denied*, 506 U.S. 940, 113 S.Ct. 377, 121 L.Ed.2d 288 (1992); *Atlantic Richfield Co. v. Current Controls, Inc.*, 1996 WL 528601 (W.D.N.Y. September 6, 1996) (noncontiguous tank farm near plant area was part of larger facility, if not a facility of its own, because it was part of an operable unit of cleanup defined by EPA); *City of Toledo v. Beazer Materials and Servs., Inc.*, 41 E.R.C. 1597, 1663 (N.D.Ohio 1995) (facility defined by scope of contamination and private party's remediation of its parcel).

308. A private party's decision regarding the geographic scope of response actions will be subject to judicial review based on whether the response actions are necessary. *See Town of New Windsor v. Tesa Truck, Inc.*, 935 F.Supp. 305, 309 (S.D.N.Y.1996); *City of Toledo*, 41 E.R.C. at 1663; *Acme Fill Corp. v. Althin CD Med., Inc.*, 1995 WL 597300 (N.D.Cal. August 22, 1995).

309. The EPA's decision to conduct a unified response action with respect to a particular geographic area, such as a plant area, consisting of noncontiguous patches of contamination, supports a finding that such a geographic area is a facility for liability purposes. *See United States v. Taylor*, 31 E.R.C. 1197, 1199 (M.D.N.C.1989).

a. The scope of a facility investigated by EPA may change as EPA's knowledge about the spread of the

contamination increases. *United States v. Conservation Chem. Co.*, 619 F.Supp. 162, 184-85 (W.D.Mo.1985) (facility includes every conceivable place where hazardous substances are located). Once sampling and investigation is complete, the scope of what is the facility may expand if investigation shows a greater spread of contaminants than originally anticipated. *See United States v. Colorado & Eastern R.R. Co.*, 50 F.3d 1530, 1533 (10th Cir.1995); *Washington State Dept. of Transp. v. EPA*, 917 F.2d 1309, 1311 (D.C.Cir.1990), *cert. denied*, 501 U.S. 1230, 111 S.Ct. 2851, 115 L.Ed.2d 1019 (1991); *Eagle-Picher Indus., Inc. v. EPA*, 822 F.2d 132, 144 n. 59 (D.C.Cir.1987).

b. EPA's administrative decision to include or exclude property from a site designation is irrelevant to this liability determination. *See Kent County v. EPA*, 963 F.2d 391, 394 (D.C. Cir.1992).

310. Although at the outset of trial, an issue of fact was reserved as to whether the Railroad parcel and the B & B parcel are separate CERCLA facilities, the facts preponderate to establish that the Arvin plant is a single facility. B & B leased the contiguous Railroad parcel and operated the two parcels as a single facility. B & B's operations released hazardous substances to the environment from and located throughout the facility, particularly in the form of contaminated groundwater.

311. The EPA investigated the subsurface of the facility as a whole and EPA's remedy is primarily directed at a plume of contaminated groundwater that underlies the facility. The plume poses an indivisible threat of leaching and diffusing contaminants to lower groundwater suitable for drinking.

312. EPA has consistently treated the plant as a single facility and has conducted a unified response action with respect to the entire facility. On October 4, 1989, EPA listed the 4.7 acre "Brown & Bryant, Inc. (Arvin Plant)" on the NPL. *See* 54 Fed.Reg. 41015, 41025 (October 4, 1989).

313. The entire Arvin plant (both parcels) falls within the express definition of a facility because it is a site (1) "where a hazardous substance has been deposited"; (2) "where a hazardous substance has been ... stored"; (3) "where a hazardous substance has been ... disposed of"; (4) "where a hazardous substance has been ... placed"; (5) and/or "where a hazardous substance has ... come to be located ...." 42 U.S.C. § 9601(9).

314. B & B's operation of the hazardous substances on the Arvin plant is a single CERCLA facility located at the plant (Site), with varying degrees of intensity of use and release of hazardous substances. The EPA has treated the plant (Site) as a unit for purposes of response actions, including listing the plant on the National Priorities List ("NPL").

315. The Railroads had full opportunity to legally challenge the NPL listing and designation of the site and elected not to do so. This is a knowing, voluntary and effective waiver of the right to contest the EPA's designation of both parcels as a single site.

F. *RELEASE/THREATENED RELEASE PRESENT*

316. CERCLA defines "release" to include "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment ..." 42 U.S.C. § 9601(22).

317. No party denies that numerous releases of hazardous substances occurred on their parcel during the time of B & B's operations on the leased Railroad parcel. The evidence overwhelmingly confirms these allegations.

318. Based on sampling and analysis conducted by both the Railroads and EPA," hazardous substances," as defined pursuant to Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), including but not limited to, ethylene dibromide, DBCP, 1, 2-dichloropropane, 1, 3-dichloropropene, and dinoseb are present in the soil and groundwater at the Arvin Plant, including on the Railroad parcel. 40 C.F.R. § 302.4, Table.

319. The presence of these substances in the soils and groundwater on and around the Arvin Site prove that hazardous substances have been released at the facility. *See Lincoln Props. Ltd. v. Higgins*, 36 E.R.C. 1228, 1245 (E.D.Cal.1993); *Mid Valley Bank v. North Valley Bank*, 764 F.Supp. 1377, 1387 (E.D.Cal.1991); *United States v. Hardage*, 761 F.Supp. 1501, 1510 (W.D.Okla.1990); *United States v. Mottolo*, 695 F.Supp. 615, 623 (D.N.H.1988); *State of Washington v. Time Oil Co.*, 687 F.Supp. 529, 532 (W.D.Wash.1988). The presence of an underground plume of contaminants emanating from the facility is further evidence that hazardous substances have been released from the facility. *See Artesian Water Co.*, 659 F.Supp. at 1282.

320. The contaminated groundwater under the facility (Site) poses a threat to further leaching and *migration* to the deeper groundwater underneath the facility and to the Arvin well. *See Dedham Water*, 889 F.2d at 1154. This is a "threatened release."

321. To establish liability, the United States need not prove every specific source of the contamination. *See Westfarm Ass'n*, 66 F.3d at 681; *Allied Princess*

Bay Co. No. 2 v. Atochem North America, Inc., 855 F.Supp. 595, 603-04 (E.D.N.Y.1993); *Lincoln Props.*, 823 F.Supp. at 1536-37; *Artesian Water Co.*, 659 F.Supp. at 1282; *see also O'Neil v. Picillo*, 883 F.2d 176, 178 (1st Cir.1989) (in cases of concurrent causation, CERCLA plaintiff does not need to prove different potential sources where each was a substantial factor; too difficult to trace source of contamination), *cert. denied*, 493 U.S. 1071, 110 S.Ct. 1115, 107 L.Ed.2d 1022 (1990). *But see United States v. Dico, Inc.*, 136 F.3d 572 (8th Cir.1998).

a. Some courts impose an obligation to trace a source in "two site" cases. *See Memphis Zane May Assocs. v. IBC Mfg. Co.*, 952 F.Supp. 541 (W.D.Tenn.1996); *Thomas*, 846 F.Supp. at 1387. Here, there is no owner of distant property that provides a subsurface connection. *See Thomas*, 846 F.Supp. at 1382 (not all courts require evidence that an actual release come from a distant property or that plaintiff respond to a perceived threat of release from a distant parcel); *see also Kalamazoo River Study Group v. Rockwell Int'l*, 3 F.Supp. 2d 815 (W.D.Mich.1997).

b. When the evidence of upgradient contamination is clear, courts shift the burden to the upgradient defendant to disprove that contaminants reached the plaintiff's parcel from upgradient property. *See Westfarm Assocs.*, 66 F.3d at 681. *Thomas v. FAG Bearings Corp.* recognized that contaminants in the immediate vicinity of a parcel are presumed to have originated there. *See* 846 F.Supp. at 1398.

322. The "two site" cases have no application here because the two parcels making up the B & B plant are contiguous, were operated together, and the plume is unitary and well-defined. The Railroad parcel and B & B's parcel are not separated by five miles as in *Thomas*. *See Thomas*, 846 F.Supp. at 1398. The

contaminants underlie the entire B & B parcel in the A-zone and threaten to move in the only direction they can, downward. EPA has concluded that there is no barrier to prevent this downward migration.

323. There has been a release of hazardous substances at the Arvin plant facility.

V. RAILROAD LIABILITY

A. *Railroads Owner Liability*

324. Two of the classes of responsible parties defined in Section 107(a) of CERCLA are (1) the current owner or operator of a facility and (2) the owner or operator at the time of disposal of a hazardous substance. *See* 42 U.S.C. § 9607(a)(1), (2).

a. The owner of a facility can be held jointly and severally liable for costs of responding to a release that occurred even if the owner was not responsible for the actual disposal. *See Hanna Mining Co.*, 882 F.2d 392, 395 (9th Cir.1989); *United States v. R.W. Meyer, Inc.*, 889 F.2d 1497, 1507 (6th Cir.1989), *cert. denied*, 494 U.S. 1057, 110 S.Ct. 1527, 108 L.Ed.2d 767 (1990); *United States v. Monsanto Co.*, 858 F.2d 160, 168 (4th Cir.1988), *cert. denied*, 490 U.S. 1106, 109 S.Ct. 3156, 104 L.Ed.2d 1019 (1989); *New York v. Shore Realty Corp.*, 759 F.2d 1032, 1043, 1044 (2d Cir.1985); *National R.R. Passenger Corp. v. N.Y. City Hous. Auth.*, 819 F.Supp. 1271, 1277 (S.D.N.Y.1993).

b. Although owners may not actually engage in disposal of hazardous substances, they are still deemed polluters for allowing ultrahazardous activity to occur on their property. *See Shore Realty Corp.*, 759 F.2d at 1051 (landowner responsible for maintenance of contaminated property, even though another party placed chemicals on property); *Farmland Indus., v. Colorado Eastern R.R. Co.*, 944 F.Supp. 1492, 1498 (D.Colo.1996); *Sterling v. Velsicol Chem. Corp.*, 647

F.Supp. 303, 317 (W.D.Tenn. 1986), *aff'd in part and rev'd in part on other grounds*, 855 F.2d 1188 (6th Cir.1988) (owner of property with hazardous waste answerable for escape); *State Dept. of Envtl. Prot. v. Ventron Corp.*, 94 N.J. 473, 468 A.2d 150, 157 (1983) (handling of toxic waste abnormally dangerous as a matter of law; "[I]t is time to recognize expressly that the law of liability has evolved so that a landowner is strictly liable to others for harm caused by toxic wastes that are stored on his property and flow onto the property of others.").

c. Courts recognize that Congress did not limit CERCLA liability only to the entity that actually disposed of the contaminant. *See Joslyn Mfg.*, 40 F.3d at 762; Shore Realty Corp., 759 F.2d at 1044 n. 14; *see also Ninth Avenue Remedial Group*, 946 F.Supp. at 663.

d. Owner liability ensures that at least some entity other than the taxpayers will be potentially available, in the first instance, to redress the environmental harm associated with the property. *See Joslyn Mfg.*, 40 F.3d at 762; *Foster v. United States*, 922 F.Supp. 642, 657 (D.D.C.1996); *Clear Lake Props. v. Rockwell Int'l Corp.*, 959 F.Supp. 763, 768 (S.D.Tex.1997); *The Ninth Avenue Remedial Group*, 946 F.Supp. at 654; *United States v. Shell Oil Co.*, 841 F.Supp. 962, 968 (C.D.Cal.1993); *Lincoln Props.*, 823 F.Supp. at 1537.

325. An owner should not be allowed to reap the benefit of a government funded cleanup on the grounds that its tenant caused all the pollution. *See Farmland Indus.*, 944 F.Supp. at 1498; *see also Weyerhaeuser Co. v. Koppers Co.*, 771 F.Supp. 1420, 1426-27 (D.Md.1991) (lessor allocated 40% share of liability for contamination at lessee's wood treatment facility); *BCW Assocs. v. Occidental Chem. Corp.*, 1988 WL 102641, (E.D.Pa.1988) (owner of warehouse allocated

one-third liability where benefitted financially from increase in value of remediated warehouse).

326. In this case, the EPA listed the B & B (Arvin) Plant on the National Priorities List as a single facility. The Railroads were aware of the NPL listing process and knew that their property was listed as part of the facility. The Railroads did not appeal the EPA's rule-making to the United States Court of Appeals for the District of Columbia Circuit within 90 days of the listing.

327. The Railroads as owners of one part of the Site are strictly liable for release of hazardous waste on the Railroad parcel and for the hazardous substances that have come to be located at the Site.

328. The Railroads own approximately 19.1% of the entire Site. The Railroad parcel was actively operated for 13 years of the entire 28 years that B & B operated the Site. A plume of contaminated groundwater in the A-zone currently is located under the facility, some of it under the Railroad parcel. The plume threatens to migrate to lower layers of drinking water in the B-zone. The threat of downward migration is a threat of release. *See United States v. CDMG Realty Co.*, 96 F.3d 706, 714 (3d Cir.1996) (CERCLA "release" includes leaching by groundwater movement).

329. There was substantial disagreement among the experts whether a specific amount of contribution of hazardous substances from the Railroad parcel, occurred so as to cause response costs. Under CERCLA strict liability principles, proof of causation is not required where hazardous substances were stored on and released from the Railroad parcel, which is an integral part of the Site.

330. The Railroads are strictly liable under CERCLA as an "owner ... of ... a facility ... from which

there is ... a release or threatened release which causes the incurrence of response costs ..." 42 U.S.C. § 9607(a).

331. Not all of the Railroad parcel was used for hazardous substance releasing activities nor was the entirety of the B & B parcel so used. The volume of the hazardous substance releasing activities on the B & B site is at least ten times greater than any Railroad parcel releases.

B. *Third-Party Defense*

332. CERCLA liability under Section 107(a) is "subject only to the defenses set forth in subsection (b) of this section ...." 42 U.S.C. § 9607(a); *see Town of Munster v. Sherwin-Williams Co., Inc.*, 27 F.3d 1268, 1271 (7th Cir.1994); *Velsicol Chemical Co.*, 9 F.3d at 530. Subsection (b) lists four statutory defenses to CERCLA liability. *See* 42 U.S.C. § 9607(b); *Bedford Affiliates v. Sills*, 156 F.3d 416, 426 (2d Cir.1998); *United States v. Monsanto Co.*, 858 F.2d 160, 170 (4th Cir.1988), *cert. denied*, 490 U.S. 1106, 109 S.Ct. 3156, 104 L.Ed.2d 1019 (1989).

a. CERCLA's defenses are narrowly construed to effectuate the statute's broad remedial purposes. *See Idaho v. Hanna Mining Co.*, 882 F.2d 392, 396 (9th Cir.1989); *Lincoln Props.*, 823 F.Supp. at 1539; *Kelley v. Thomas Solvent Co.*, 727 F.Supp. 1532, 1540 (W.D.Mich.1989).

b. No equitable defenses exist; subsection (b) establishes "the universe of defenses to section 107 liability." *General Elec. Co. v. Litton Indus. Automation Sys., Inc.*, 920 F.2d 1415, 1418 (8th Cir.1990), *cert. denied*, 499 U.S. 937, 111 S.Ct. 1390, 113 L.Ed.2d 446 (1991); *see* 42 U.S.C. S 9607(b). Subsection (b) states:

There shall be no liability under subsection (a) of this section for a person otherwise liable who can establish by a preponderance of the evidence that the release or threat of release of a hazardous substance and the damages resulting therefrom were caused solely by-

(1) an act of God;

(2) and act of war;

(3) an act or omission of a third party other than an employee or agent of the defendant, or than one whose act or omission occurs in connection with a contractual relationship, existing directly or indirectly, with the defendant ..., if the defendant establishes by a preponderance of the evidence that (a) he exercised due care with respect to the hazardous substance concerned, taking into consideration the characteristics of such hazardous substance, in light of all relevant facts and circumstances, and (b) he took precautions against foresee able acts or omissions of any such third party and the consequences that could foresee ably result from such acts or omissions; or

(4) any combination of the foregoing paragraphs.

333. No evidence exists to support the "act of God" or "act of war" defenses. 42 U.S.C. § 9607(b)(1)(2).

334. To establish a third party defense, the defendants (Railroads) must show by a preponderance of the evidence that the release or threatened release was caused solely by an unrelated third party; the defendants bear the burden of proof. *See Foster v. United States*, 922 F.Supp. 642, 653-54 (D.D.C.1996); *United States v. Stringfellow*, 661 F.Supp. 1053, 1061 (C.D.Cal.1987) (third-party defense applies "only where a totally unrelated third party is the sole cause of the release or threatened release of a hazardous

substance"); *O'Neil v. Picillo*, 682 F.Supp. 706, 728 (D.R.I.1988) ("third-party defense 'essentially serve[s] to shift the burden of proof of causation to the defendants'") (quoting *Violet v. Picillo*, 648 F.Supp. 1283, 1293 (D.R.I.1986), *aff'd*, 883 F.2d 176 (1st Cir. 1989), *cert. denied*, 493 U.S. 1071, 110 S.Ct. 1115, 107 L.Ed.2d 1022 (1990); *United States v. A & N Cleaners and Launderers, Inc.*, 854 F.Supp. 229, 239 (S.D.N.Y.1994), *overruled on other grounds by Commander Oil Corp. v. Barlo Equip. Corp.*, 215 F.3d 321 (2d Cir.2000) (citing various cases); *Chatham Steel Corp. v. Brown*, 858 F.Supp. 1130, 1154-55 (N.D.Fla.1994).

a. Once the defendants show that the release or threatened release was caused solely by an unrelated third party, the defendants must show that the exercise of "due care" with respect to the hazardous substances on the property and "took precautions against the foresee able acts or omissions of [the] third party and the consequences that could foresee ably result from such acts or omissions." 42 U.S.C. § 9607(3)(a)(b).

b. A defendant bears the burden of proving each element of the third party defense. *See Foster v. United States*, 922 F.Supp. 642, 653-54 (D.D.C.1996); *A & N Cleaners*, 854 F.Supp. at 239; *Chatham Steel Corp.*, 858 F.Supp. at 1154-55. A defendant's failure to meet its burden on any one of the required elements precludes application of the defense. *See In re Sterling Steel Treating, Inc.*, 94 B.R. at 929.

335. "Due care" requires a defendant to "demonstrate that it took necessary steps to prevent foresee able adverse consequences arising from the pollution on the site." *A & N Cleaners*, 854 F.Supp. at 238, *overruled on other grounds by Commander Oil Corp.*, 215 F.3d 321; *see also Kerr-McGee Chem. Corp.*

v. Lefton Iron and Metal Co., 14 F.3d 321, 325 n. 3 (7th Cir.1994) (due care not established when potentially responsible party took no affirmative measures to clean site); *United States v. DiBiase Salem Realty Trust*, No. 91-11028-MA, slip op. at 15 (D.Mass. Nov. 19, 1993) (CERCLA's affirmative defenses not available when defendant took no steps to prevent harm from hazardous substances); *Lincoln Props.*, 823 F.Supp. at 1543 (defendant exercised due care by taking contaminated wells out of service and destroying them in manner intended to prevent further contamination); *In re Sterling Steel Treating, Inc.*, 94 B.R. 924, 930 (Bankr. E.D.Mich. 1989) (defendant exercised due care after discovering hazardous waste on property when it took immediate steps to properly dispose of waste).

336. The precautionary requirement is satisfied by taking precautionary action against the foresee able actions of third parties responsible for the hazardous substances in question. *See Monsanto*, 858 F.2d at 169; *A & N Cleaners*, 854 F.Supp. at 239, *overruled on other grounds by Commander Oil Corp.*, 215 F.3d 321.

337. The evidence shows no action by the Railroads, during site *operations*, to prevent foresee able adverse consequences by its lessee, B & B.

338. "[T]his [third-party] defense is unavailable if the third party had a direct or indirect contractual relationship with the owner, and the contamination *occurred* in the course of that relationship." *Bedford Affiliates*, 156 F.3d at 425; *see also* 42 U.S.C. § 9607(b)(3)." The term 'contractual relationship' ... includes, but is not limited to, land contracts, deeds or other instruments transferring title or possession ...." 42 U.S.C. § 9601(35)(A); *see also A & N Cleaners*, 854 F.Supp. at 1326-28 (holding that lease constitutes "contractual relationship" under CERCLA and that determinant factor in establishing such a relationship is

flow of benefits or obligations between parties), *overruled on other grounds by Commander Oil Corp.*, 215 F.3d 321. Here, B & B had a direct contractual (lease) relationship with the Railroads.

339. An act or omission of a third party occurs "in connection with" a lease if the contamination of the leased property resulted during the course of the lease from activities of the lessee. *See Bedford Affiliates*, 156 F.3d at 425; *Monsanto*, 858 F.2d at 169; *Briggs & Stratton Corp. v. Concrete Sales & Servs.*, 20 F.Supp.2d 1356, 1367 (M.D.Ga.1998); *Johnson County Airport Comn. v. Parsonitt Co.*, 916 F.Supp. 1090, 1094 n. 5 (D.Kan.1996); *North Carolina v. W.R. Peele Sr. Trust*, 876 F.Supp. 733, 745 (E.D.N.C.1995), *clarification denied*, 889 F.Supp. 849 (E.D.N.C.1995); *A & N Cleaners*, 788 F.Supp. at 1334, *overruled on other grounds by Commander Oil Corp.*, 215 F.3d 321; *International Clinical Labs., Inc. v. Stevens*, 710 F.Supp. 466, 470-71 (E.D.N.Y.1989).

340. The phrase "in connection with" connotes a requirement that the lease be "relate[d] to the hazardous substances." *See Westwood Pharms. v. National Fuel Gas Distrib. Corp.*, 964 F.2d 85, 89 (2d Cir. 1992) ("[A] landowner is precluded from raising the third-party defense only if the contract between the landowner and the third party somehow is connected with the handling of hazardous substances."); *Reichhold Chems., Inc. v. Textron, Inc.*, 888 F.Supp. 1116, 1129 (N.D.Fla.1995); *Lincoln Props.*, 823 F.Supp. at 1539; *United States v. A & N Cleaners and Launderers, Inc.*, 788 F.Supp. 1317, 1335 (S.D.N.Y.1992); *Thomas Solvent Co.*, 727 F.Supp. at 1540; *Shapiro v. Alexanderson*, 743 F.Supp. 268, 271 (S.D.N.Y.1990).

C. *Third Party Defense is Inapplicable*

341. A "contractual relationship" between the Railroads and B & B existed. In 1975, B & B leased the Railroad 0.9 acre parcel of land adjacent to B & B's 4.7 acres parcel of land. The exclusive purpose of the lease was for parking "fertilizer rigs," which often contained chemicals, weed killer or fertilizer, to be applied to farmland or other real property.

342. Before the 1975 lease, the Railroads and B & B entered into a rail spur agreement in 1960, which allowed B & B to construct and use a rail spur along the B & B warehouse, adjacent to the Railroad parcel.

343. Throughout its operation of the Arvin Plant until 1989, B & B's facility operations under the lease released and, or threatened release of hazardous substances on the Site, which includes releases on the leased Railroad parcel. The presence of hazardous substances on the Railroad parcel, some of which were released to the environment, at a minimum, caused the need for a CERCLA investigation, characterization and analysis of that parcel as part of the overall Site.

344. Rains and other water applied to the Site, which was engineered to drain to a sump and waste pond, facilitated the percolation of hazardous substances to subterranean soil and groundwater underlying the site.

345. Fertilizer rigs containing hazardous substances were constantly washed out and rinsed onto the property, releasing hazardous substances. Spills during loading and unloading of chemicals were continuous at the site and percolated through the soil to the groundwater.

346. The Railroads periodically inspected B & B's plant and had actual knowledge that B & B was in the business of formulating, mixing, storing and

distributing agricultural chemicals and that B & B used the leased parcel to store chemicals where leaks would often occur. In 1984, the Railroads required B & B to execute a supplemental agreement containing an environmental indemnity for the Site. The agreement required B & B to periodically furnish the Railroad with "satisfactory proof" that B & B was in compliance with all laws concerning hazardous waste storage and disposal. B & B agreed to indemnify the Railroads.

347. The third party defense is not available because B & B "had a direct or indirect contractual relationship with the owner, [the Railroads,] and the contamination occurred in the course of that relationship." *Bedford Affiliates*, 156 F.3d at 425; *see also* 42 U.S.C. § 9607(b)(3).

348. The Railroads have failed to show that they acted with due care with respect to the hazardous substances on the property, or took any precautionary actions against the foreseeable results of B & B's activities in storing and handling hazardous ag chemicals on the Railroad parcel. Other than modifying the lease to include an indemnity provision, the Railroads submitted no evidence that they took any action to prevent or mitigate their lessee's conduct on the Site, which ignored the hazards of continuous spills, releases and reckless practices in the unloading, storage, formulating and loading of toxic ag-chemicals. The evidence at trial showed B & B was a "sloppy" operator that took no meaningful steps to control the release of agricultural chemicals to the environment during the regular course of B & B's operations. The party-defense is not established by virtue of the Railroad's failure to take any meaningful action to correct B & B's hazardous on-Site activities in the delivery-receipt, storage, and conduct of its ag-chem application business.

349. The Railroads argue the third-party defense applies to releases originating from the B & B parcel, not the Railroad parcel leased to B & B. *See* Doc. 1321, 29:1-9 ("Railroad response to Governments' Proposed Findings of Fact and Conclusions of Law"). The Railroad argument is misplaced.

350. "The trigger to liability under § 9607(a)(2) is ownership or operation of a facility at the time of a disposal, not culpability or responsibility for the contamination." *Carson Harbor Village, Ltd. v. Unocal Corp.*, 227 F.3d 1196, 1207 (9th Cir.2000). CERCLA liability arises when there has been a release or a threatened release of a hazardous substance at *a facility*. *See B.F. Goodrich v. Murtha*, 958 F.2d 1192, 1201 (2d Cir.1992). Causation is a peripheral issue under CERCLA. *See Reichhold Chems., Inc.*, 888 F.Supp. 1116, 1128 (N.D.Fla.1995); *United States v. DiBiase Salem Realty Trust*, 1993 WL 729662, (D.Mass. Nov. 19, 1993)." The plaintiff is not required to link the defendant's conduct or the defendant's waste firmly to the release or threat of release." *See Reichhold Chems.*, 888 F.Supp. at 1129. "The release or threat of release need only have emanated from a facility which [defendant] owned." *Dedham Water Co. v. Cumberland Farms Dairy, Inc.*, 889 F.2d 1146, 1153 (1st Cir.1989).

351. The Railroads are "owners" of *part* of the Arvin "facility," a single CERCLA Site, which encompasses both B & B's property as well as their real property leased to B & B.

352. Although potentially unfair, CERCLA liability makes no distinctions between lines of property ownership. The scope of a geographic facility is not limited by the fiction of property lines because releases and migration of hazardous substances do not respect man-made ownership lines. *See United States v. Rohm*

and Haas, 2 F.3d 1265, 1279 (3d Cir. 1993); *accord Southern Pacific Trans. Co. v. Voluntary Purchasing Groups, Inc.*, 1997 WL 457510, at *4 (N.D.Tex. Aug 7, 1997); *Clear Lake Props.*, 959 F.Supp. at 768; *United States v. Shell Oil Co.*, 841 F.Supp. at 970; *Louisiana-Pacific Corp.*, 811 F.Supp. at 1431; *Stringfellow*, 661 F.Supp. at 1059; *Ohio v. U.S. EPA*, 997 F.2d at 1549.

353. Limiting the definition of a facility to property lines, is inconsistent with the liability provisions of CERCLA Section 107(a) and the causation based third party defense in Section 107(b). *See Louisiana-Pacific Corp.*, 811 F.Supp. at 1431; *Pretty Products*, 780 F.Supp. at 1499; *Lincoln Props.*, 823 F.Supp. at 1536-37.

> CERCLA Section 107(a) states in pertinent part:
>
> Notwithstanding any other provision or rule of law, and subject only to the defenses set forth in subsection (b) of this section-(1) the owner ... of ... a facility, ... from which there is a release, or a threatened release which causes the incurrence or response costs, of a hazardous substance shall be liable ....

The Railroads' concerns are more appropriately addressed in the harm (apportionment) stage; they do not affect liability.

354. The Railroads are strictly liable for the hazardous substances originating from the "Railroad parcel" that in part caused the need for CERCLA response of the Site. No third-party defense is available to the Railroads under 42 U.S.C. § 9607(b) by virtue of their lease with B & B.

VI. SHELL OIL COMPANY LIABILITY

A. *Operator Liability*

355. Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(1), imposes liability on "the owner and

operator of a ... facility ... from which there is a release, or a threatened release which causes the incurrence of response costs, of a hazardous substance ...." Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2), also imposes liability on "any person who at the time of disposal of any hazardous substance ... operated any facility at which such hazardous substances were disposed of ... from which there is a release, or a threatened release which causes the incurrence of response costs, of a hazardous substance ...."

356. Section 101(20)(A)(ii) of CERCLA, 42 U.S.C. § 9601(20)(A) (ii) defines the terms "owner or operator" as "in the case of an onshore facility or an offshore facility, any person owning or operating such facility." Because the statute's tautological definition is unhelpful, the terms are ascribed "their ordinary meanings rather than unusual or technical meanings." *Edward Hines Lumber Co. v. Vulcan Materials Co.*, 861 F.2d 155, 156 (7th Cir.1988) ("The definition of 'owner or operator' ... must come from a source other than the text. The circularity strongly implies, however, that the statutory terms have their ordinary meanings rather than unusual or technical meanings."); *United States v. Bestfoods*, 524 U.S. 51, 118 S.Ct. 1876, 141 L.Ed.2d 43 (1998).

357. Some courts have resorted to dictionary definitions of the term "operate," *see East Bay Mun. Utility Dist. v. United States Dep't of Commerce*, 142 F.3d 479, 484 (D.C. Cir.1998) (term "operate" means to "direct the working of; to manage, conduct, work (a railway, business, etc.)," or "to manage and put or keep in operation whether with personal effort or not." (*quoting* The Oxford English Dictionary (2d ed. 1989) and Webster's Third New International Dictionary (1967)); *United States v. Gurley*, 43 F.3d 1188, 1193 (8th Cir.1994) ("to operate" means to "bring about by

or as if by the exertion of positive effort or influence."), *cert. denied*, 516 U.S. 817, 116 S.Ct. 73, 133 L.Ed.2d 33 (1995). Courts, however, must also construe CERCLA's statutory terms in light of CERCLA's broad remedial goals. *See Florida Power & Light Co. v. Allis Chalmers Corp.*, 893 F.2d 1313, 1317 (11th Cir.1990); *3550 Stevens Creek Assocs. v. Barclays Bank of California*, 915 F.2d 1355, 1360 n. 10 (9th Cir.1989), *cert. denied*, 500 U.S. 917, 111 S.Ct. 2014, 114 L.Ed.2d 101 (1991).

358. "For one to be considered an operator, then, there must be some nexus between that person's or entity's control and the hazardous waste contained in the facility." *Geraghty and Miller, Inc. v. Conoco Inc.*, 234 F.3d 917, 928 (5th Cir.2000). This nexus has been described as the "well-settled rule ... that 'operator' liability under section 9607(a)(2) only attaches if the defendant had authority to control the cause of the contamination at the time the hazardous substances were released into the environment." *Kaiser Aluminum & Chem. Corp. v. Catellus Dev. Corp.*, 976 F.2d 1338, 1341 (9th Cir.1992), *citing Nurad, Inc. v. Hooper & Sons Co.*, 966 F.2d 837, 842 (4th Cir.1992) (the authority to control the source of the contamination "is the definition of 'operator' that most courts have adopted"); *CPC Int'l, Inc. v. Aerojet-General Corp.*, 731 F.Supp. 783, 788 (W.D. Mich.1989) ("The most commonly adopted yardstick for determining whether a party is an owner-operator under CERCLA is the degree of control that party is able to exert over the activity causing the pollution."); *Conoco*, 234 F.3d at 928; *accord Hines*, 861 F.2d 155 (contractor not liable as an "operator" because, although he designed and built the wood treatment plant, he had no authority to control the day-to-day operation of the plant after it was built; and it was

during the operation of the plant that the hazardous materials were released).

359. *Long Beach Unified Sch. Dist. v. Godwin Living Trust,* holds that "to be an operator of a hazardous waste facility, a party must do more than stand by and fail to prevent the contamination. It must play an active role in running the facility, typically involving hands-on day-to-day participation in the facility's management." 32 F.3d 1364, 1366 (9th Cir.1994); *compare United States v. Gurley,* 43 F.3d 1188 (8th Cir.1994), *cert. denied,* 516 U.S. 817, 116 S.Ct. 73, 133 L.Ed.2d 33 (1995) (under "preventative" theory," operator" liability may be found where party held authority to control, whether or not it was actually exercised).

360. "The overwhelming weight of case authority establishes that in order to hold a 'person' liable as an operator the person must have participated in the day-to-day or operational management of the facility." *Acme Fill Corp. v. Althin CD Med., Inc.,* 1995 WL 597300 at *7 (N.D.Cal. Aug. 22, 1995); *see also United States v. New Castle County,* 727 F.Supp. 854, 870 (D.Del.1989); *United States v. Dart Indus., Inc.,* 847 F.2d 144 (4th Cir.1988); *United States v. DiBiase,* 1993 WL 729662 at *6 (D.Mass. Nov. 19, 1993), *aff'd,* 45 F.3d 541 (1st Cir.1995) (an "operator" is defined as "one having active involvement in and control over the operations of a facility."); *United States v. Cordova Chem. Co. of Mich.,* 113 F.3d 572, 579-81 (6th Cir.*1997*); *Redwing Carriers, Inc. v. Saraland Apartments,* 94 F.3d 1489, 1504-05 (11th Cir.1996); *Schiavone,* 79 F.3d 248, 253-54 (2d Cir.1996); *United States v. Gurley,* 43 F.3d 1188, 1193 (8th Cir.1994); *John S. Boyd Co., Inc. v. Boston Gas Co.,* 992 F.2d 401, 408 (1st Cir.1993); *Lansford-Coaldale Joint Water Auth. v. Tonolli Corp.,* 4 F.3d 1209, 1220-22 (3d Cir.1993); *Joslyn Manuf. Co. v.*

T.L. James & Co., Inc., 893 F.2d 80, 83 (5th Cir.1990); *Hines Lumber Co.*, 861 F.2d at 157-59 (7th Cir.1988).

361. *United States v. Bestfoods*, addresses CERCLA "operator" liability:

> [U]nder CERCLA, an operator is simply someone who directs the workings of, manages, or conducts the affairs of a facility. To sharpen the definition for purposes of CERCLA's concern with environmental contamination, an operator must manage, direct, or conduct operations specifically related to pollution, that is, operations having to do with the leakage or disposal of hazardous waste, or decisions about compliance with environmental regulations.

524 U.S. at 66-67. The phrase "to operate" means "something more than mere mechanical activation of pumps and valves, and must be read to contemplate 'operation' as including the exercise of direction over the facility's activities." *Id.* at 71.

Although *Bestfoods* was decided in the context of whether a parent corporation could be held directly liable for its management and direction of a subsidiary's facility under CERCLA," operator" liability may be applied to any CERCLA context," whether the defendant is acting in a corporate, governmental, or any other capacity." *United States v. Township of Brighton*, 153 F.3d 307, 314 n. 7 (6th Cir.1998).

362. Although the Ninth Circuit has not dealt with CERCLA "operator" liability in light of the Supreme Court's *Bestfoods* decision, the Fifth Circuit's holding in *Township of Brighton* is instructive:

> We hold, therefore, that an "actual control" test applies not just in the corporate context, but in the present one as well. Before one can be considered

> an 'operator' for CERCLA purposes, one must perform affirmative acts. The failure to act, even when coupled with the ability or authority to do so, cannot make an entity into an operator.....*After* it is established that a defendant is an operator, however, a defendant is just as responsible for hazardous conditions caused by its neglect and omissions as it is for those caused by its affirmative acts.

153 F.3d at 314-15 (emphasis in original).

363. Indicia of operator liability include: defendant's expertise and knowledge of the environmental dangers posed by hazardous waste; establishment and design of the facility; participation in the opening and closing of a facility; hiring or supervision of employees involved in activities related to pollution; determination the facility's operational plan; monitoring of and control over hazardous waste disposal; and public declarations of responsibility over the facility and/or its hazardous waste disposal. *See id.* at 317 (citing *United States v. Stringfellow*, 20 Envtl. L. Rep. 20656, 20658 (C.D.Cal. Jan. 9, 1990) (citing *Rockwell Int'l Corp. v. IU Int'l Corp.*, 702 F.Supp. 1384, 1390-91 (N.D.Ill.1988))).

B. *Shell is Not an Operator*

364. Shell Oil Company cannot be held liable as an "operator" under CERCLA without exercising actual control over B & B's operations. The inquiry in this case is complicated by the fact that Shell had some "control" in dictating the terms under which D-D was delivered and unloaded by tanker at the Site. There is no question that the D-D delivery process caused hazardous releases at the Site. B & B directed the workings of, managed, and conducted the daily operations at the Arvin Site, which included receiving,

storing, formulation, loading and application of Shell chemicals. Shell did not participate in the day-to-day operations of the Arvin facility or act in a managerial capacity for the plant's operations. Shell did not hire or supervise B & B's employees involved in pollution causing activities and did not open, close, or exercise direction over the facility's storage and sale activities. Shell had the ability to affect delivery and unloading, but did not do so in so active a way as to assume actual control of the processes.

365. Shell did arrange for the sale and delivery of its agricultural chemicals (hazardous substances) to the Arvin facility, and though its contractors, common carriers, participated and provided some direction over the loading-unloading of its D-D product, a process where spills were inherent, B & B managed, directed, and conducted operations specifically related to pollution; i.e. operations having to do with the loading, unloading, spilling, storing, leakage or disposal of hazardous waste. B & B made the decisions about compliance with environmental regulations at the Arvin facility, including whether to follow and comply with technical requirements provided by Shell, starting around 1979, for handling and storage of Shell chemicals.

366. B & B decided to continue as a Shell distributor, chose to store Shell D-D in a bulk storage tank at the Arvin Site, regularly replaced storage tanks every 4-6 years, and chose not to use teflon seals and special chemical hoses in the late 1960s. B & B made an independent decision that most of its fertilizer rigs would be washed out on or adjacent to unprotected soil, and designed the Site drainage of the residue to wash downgradient into the Site's waste sump at the southeast corner of the property. B & B was responsible for the replacement of leaky sight gauges,

hoses, and filters for each rig; and determined how and where to store chemicals and fertilizers. B & B made all decisions about compliance with State and Federal environmental regulations, and determined which precautionary procedures would be implemented.

367. The fact that Shell, in an effort to be environmentally responsible, provided B & B with technical environmental information about its products, engineering information and specifications, as well as information regarding safe storage and handling practices is insufficient for operator liability to attach to such activities standing alone. "[T]he imposition of liability upon a manufacturer on account of its dissemination of safety-related information is anathematic, even to the broad and salutary remedial purposes of CERCLA." *Jordan v. Southern Wood Piedmont Co., ITT*, 805 F.Supp. 1575, 1580 (S.D. Ga. 1992) (chemical manufacturer recommended disposal procedure to wood treatment facility to dispose of the hazardous substance in compliance with the Occupational Safety and Health Administration ("OSHA"), *see* 29 C.F.R. § 1900.1200; a disposal method for leaks or spills, invited inquiries from anyone experiencing chemical problems with which it had expertise, and provided several tests and surveys). Shell's information was provided for B & B's assistance to improve B & B's environmental protective practices in its handling of Shell's products.

368. Shell's "Bulk Facilities Improvement Allowance" program does not create operator liability under CERCLA. The program was voluntary. There is no evidence Shell enforced the program by withholding products from non-complying buyers. B & B owned the improvements made to its safety and storage facilities. There was no requirement that B & B submit to inspection as part of the Bulk Facilities

Improvement program. Shell's employee, Mr. Patrick, who inspected the Arvin facility on September 10, 1981, was "absolutely not" managing B & B's operations. *See* ¶ 125. Although several recommendations were made by Shell to B & B as a result of the inspection, there is no evidence B & B took any specific action in response to the inspector's recommendations other than putting a dike enclosure around the D-D tank installed in 1981. B & B could pick and choose what suggestions and recommendations may have been made by Shell.

369. Shell's bargaining power as a supplier of popularly-used pesticides is insufficient to support operator liability. The "mere ability to exercise control as a result of [the market appeal of a product or] the financial relationship of the parties is insufficient for liability to attach. The entity must actually exercise control." *United States v. Consolidated Rail Corp.*, 729 F.Supp. 1461, 1468 (D.Del.1990); see *also Rockwell Int'l Corp.*, 702 F.Supp. at 1390. "[T]he mere existence of economic bargaining power to impose certain terms and conditions on another, does not itself create an obligation under CERCLA." *General Elec. Co. v. AAMCO Transmissions, Inc.*, 962 F.2d 281, 286 (2d Cir.1992) (emphasis in origin. *New York v. General Elec. Co.*, 592 F.Supp. 291, 297 (N.D.N.Y.1984). Shell did not assume a position of authority to manage or direct B & B to comply with environmental laws and regulations. Shell did not participate in the day-to-day operational management of the facility.

370. Contrary to the Governments' assertions, Bestfoods, *Township of Brighton*, 153 F.3d at 316 and *United States v. Anthony Dell'Aquilla Enter. and Subsidiaries*, 150 F.3d 329, 334 (3d Cir.1998), do not stand "for the proposition that entities who direct decisions about compliance with environmental

regulations can be held liable as operators of a facility [.]" *Bestfoods* makes clear that "under CERCLA, an operator is simply someone who directs the workings of, manages, or conducts the affairs of a facility." 524 U.S. at 66-67. An operator must "manage, direct, or conduct operations specifically related to pollution ... or decisions about compliance with environmental regulations"; the bedrock of liability is control over the operation of a CERCLA defined "facility." Shell did not operate the site. Its activities at most covered shipping and receiving D-D to the Arvin plant by common carrier as a precursor to bulk storage of its product, D-D. *See* 42 U.S.C. § 9607(a)(1)(2) ("operator" liability attaches for a "facility"); *Bestfoods,* 524 U.S. at 66-67.

371. In *Township of Brighton* a township operated a dump pursuant to an agreement with the owner of the dump property, which required the dump to "meet the specifications of and be under the supervision of the [township's] Board of Appeals." 153 F.3d at 310. Here, B & B was not required to submit to the Shell inspection; participation in Shell's "Bulk Facilities Improvement Allowance" program was entirely *voluntary. Anthony Dell'Aquilla Enterprises* is not a CERCLA case; it arose under the Clean Air Act, 42 U.S.C. § 7401 *et seq.* The contractor's liability as an "operator" under the Clean Air Act was established through its direct control and supervision over demolition and project development activities at a site. *See Anthony Dell'Aquilla Enterprises*, 150 F.3d 330. Shell did not have the authority to directly control and supervise the operations of the B & B Facility; Shell could only suggest or recommend as to handling and storage of its product.

372. The Governments' claim that operator liability may be based on a "specific process such as the

unloading of liquid product" at a CERCLA defined "facility" is unsupported. *See* 42 U.S.C. § 9607(a)(1)(2) ("operator" liability attaches for a "facility"); *Bestfoods*, 524 U.S. at 66-67 (operator liability may only attach where someone "directs the workings of, manages, or conducts the affairs of a facility."). Directing the specific process of unloading of a hazardous substance is insufficient for operator liability to attach.

D. *Arranger Liability*

373. Section 107(a) of CERCLA provides that:

> any person who by contract, agreement, or otherwise arranged for disposal ... of hazardous substances owned or possessed by such person ... at any facility ... owned or operated by another party or entity and containing such hazardous substances ..., from which there is a release, or a threatened release which causes the incurrence of response costs, of a hazardous substance ... shall be liable ....

Congress used broad language in providing for liability for persons who "by contract, agreement, or otherwise arranged for" the disposal of hazardous substances. *See A & F Materials*, 582 F.Supp. at 845.

374. CERCLA does not define the phrase "arranged for." *See Amcast Indus. Corp. v. Detrex Corp.*, 2 F.3d 746, 751 (7th Cir.1993); *United States v. Aceto Agr. Chem. Corp.*, 872 F.2d 1373, 1379 (8th Cir.1989). While the legislative history of CERCLA sheds little light on the intended meaning of this phrase, courts have concluded that a liberal judicial interpretation is consistent with CERCLA's "overwhelmingly remedial" statutory scheme. *See NEPACCO*, 810 F.2d at 733; *Dedham Water Co.*, 805 F.2d at 1081; *Conservation Chem. Co.*, 619 F.Supp. at 192; *United States v. Mottolo*, 605 F.Supp. 898, 902 (D.N.H.1985).

375. The Ninth Circuit emphasizes the need to construe CERCLA's liability provisions broadly:

> Because CERCLA is essentially a remedial statute designed by Congress to protect and preserve public health and the environment, [courts] are ... obligated to construe its provisions liberally to avoid the frustration of the beneficial legislated purposes ... "in the absence of a specific congressional intent otherwise."

Wilshire Westwood Ass'n v. Atlantic Richfield, 881 F.2d 801, 804 (9th Cir. 1989); *see also Wickland Oil Terminals v. Asarco*, 792 F.2d 887 (9th Cir.1986).

376. The term "liable" is construed "to be the standard of liability which obtains under Section 1321 of Title 33 [of the Clean Water Act]," which is strict liability. *State of New York v. Shore Realty Corp.*, 759 F.2d 1032, 1042 (2d Cir.1985); *see also* 42 U.S.C. § 9601(33); *United States v. R.W. Meyer, Inc.*, 889 F.2d 1497, 1507 (6th Cir.1989), *cert. denied*, 494 U.S. 1057, 110 S.Ct. 1527, 108 L.Ed.2d 767 (1990); *J.V. Peters & Co. v. Administrator, EPA*, 767 F.2d 263, 266 (6th Cir.1985).

377. "The term 'disposal' ... shall have the meaning provided in section 1004 of the Solid Waste Disposal Act [42 U.S.C. §§ 6903]." 42 U.S.C. § 9601(29). Section 1004 of the Solid Waste Disposal Act defines "*disposal*" as:

> the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.

42 U.S.C. § 6903(3).

378. In the Ninth Circuit, the term "disposal" may include the passive, as well as active, migration of *hazardous* substances. *See Carson Harbor Village, Ltd. v. Unocal Corporation*, 227 F.3d 1196, 1210 (9th Cir.2000) (*abrogating Ecodyne Corp. v. Shah*, 718 F.Supp. 1454 (N.D.Cal.1989)); *Kaiser Aluminum*, 976 F.2d at 1342, following Fifth Circuit and holding that "'disposal' should not be limited solely to the initial introduction of hazardous substances onto property. Rather, consistent with the overall remedial purpose of CERCLA, 'disposal' should be read broadly to include the subsequent 'move[ment], dispers[al], or released [of such substances] during landfill excavations and fillings.'" (quoting and following *Tanglewood East Homeowners v. Charles-Thomas, Inc.*, 849 F.2d 1568, 1573 (5th Cir.1988)) (modifications in original); *compare Nurad Inc. v. William E. Hooper & Sons Co.*, 966 F.2d 837, 844-46 (4th Cir.1992) ("disposal" includes passive migration); *with United States v. 150 Acres of Land*, 204 F.3d 698, 705-06 (6th Cir.2000) ("disposal" requires active human conduct); *ABB Indus. Sys., Inc. v. Prime Tech., Inc.*, 120 F.3d 351, 357-59 (2d Cir.1997) (same); *United States v. CDMG Realty Co.*, 96 F.3d 706, 713-18 (3d Cir.1996) (same).

379. In determining whether a particular transaction amounts to an arrangement for disposal, courts focus on various factors. *See South Florida Water Mgmt. Dist. v. Montalvo*, 84 F.3d 402, 406-407 (11th Cir. 1996), For example, where the transaction involved a sale, the inquiry is whether there was a transfer of a "useful" or "waste" product. *See AM Int'l, Inc. v. Int'l Forging Equip. Corp.*, 982 F.2d 989, 999 (6th Cir.1993); *Prudential Ins. Co. v. United States Gypsum*, 711 F.Supp. 1244, 1254 (D.N.J.1989). Several cases consider whether the defendant intended to dispose of a substance at the time of a transaction. *See*

Amcast Indus. Corp. v. Detrex Corp., 2 F.3d 746, 751 (7th Cir.1993), *cert. denied*, 510 U.S. 1044, 114 S.Ct. 691, 126 L.Ed.2d 658 (1994); *United States v. Cello-Foil Products, Inc.*, 100 F.3d 1227, 1231 (6th Cir.1996); *The Ekotek Site PRP Comm. v. Self*, 932 F.Supp. 1328, 1333 (D.Utah1996), *reconsideration denied*, 932 F.Supp. 1319 (D.Utah 1996); *Edward Hines Lumber Co. v. Vulcan Materials Co.*, 685 F.Supp. 651, 654-56 (N.D.Ill.), *aff'd*, 861 F.2d 155 (7th Cir.1988). Courts also look to whether a defendant made the "crucial decision" to place hazardous substances in the hands of a particular facility. *See United States v. A & F Materials Co.*, 582 F.Supp. 842, 845 (S.D. Iil. 1984). "Citing these and other reported cases, litigants have at times elevated factors courts found pertinent in particular contexts to the status of bright-line rules for defining arranger liability." *South Florida Water Mgmt. Dist.*, 84 F.3d at 406; *see, e.g., Florida Power & Light*, 893 F.2d at 1317-18 (citing the reasoning from *A & F Materials*).

380. The Ninth Circuit rejects any attempt to substitute a per se rule for the phrase "arranged for" as used in § 107(a)(3)'s text. *See Cadillac Fairview/California, Inc. v. United States of America*, 41 F.3d 562, 565 (9th Cir.1994), citing *Florida Power & Light Co. v. Allis Chalmers Corp.*, 893 F.2d 1313, 1318 (11th Cir.1990) (rejecting a per se rule as to "arranger" liability under § 107(a)(3)), and *Aceto Agric. Chem. Corp.*, 872 F.2d at 1380 (Section 107(a)(3) must be given "a liberal judicial interpretation ... consistent with CERCLA's overwhelmingly remedial statutory scheme."); *Jones-Hamilton Co. v. Beazer Materials & Servs., Inc.*, 973 F.2d 688, 695 (9th Cir.1992) (quoting and adopting analysis of *United States v. Aceto Agric. Chem. Corp.*, 872 F.2d 1373 (8th Cir.1989)).

381. The relevant inquiry is whether a "'transaction in fact involves an arrangement for the disposal [or treatment] of a hazardous substance.'" *Cadillac Fairview/California, Inc. v. United States*, 41 F.3d 562, 565 (9th Cir.1994) (quoting *Jones-Hamilton*, 973 F.2d at 695 (quoting and adopting analysis of *Aceto*, 872 F.2d at 1381); *see also Florida Power & Light Co. v. Allis Chalmers Corp.*, 893 F.2d 1313, 1318 (11th Cir.1990) (rejecting per se rule that only party who owns a hazardous substance and controls the disposal process is liable under § 107(a)(3))). The inquiry involves a review of "all the circumstances." *Cadillac Fairview/California, Inc.*, 41 F.3d at 565; *see United States v. Cello-Foil Products, Inc.*, 100 F.3d 1227, 1231 (6th Cir.1996); *The Ekotek Site PRP Committee v. Self*, 932 F.Supp. 1328, 1333 (D.Utah 1996), *reconsideration denied* 932 F.Supp. 1319 (D.Utah 1996); *United States v. Gordon Stafford, Inc.*, 810 F.Supp. 182, 185 (N.D.W.Va.1993).

382. The Ninth Circuit has extended liability under section 107(a)(3) to persons who have sold and therefore no longer own the hazardous substances, *Catellus Dev. Corp. v. United States*, 34 F.3d 748, 752 (9th Cir.1994); *Louisiana-Pacific Corp. v. ASARCO, Inc.*, 24 F.3d 1565, 1570-71 (9th Cir.1994), and to persons who have no control over the process leading to release of the substances, *Catellus*, 34 F.3d at 752; *Jones-Hamilton Co. v. Beazer Materials & Servs.*, 973 F.2d 688 (9th Cir.1992); *see also United States v. Aceto Agric. Chems. Corp.*, 872 F.2d 1373 (8th Cir.1989).

383. The Ninth Circuit's most recent expression of the test for arranger liability is found in *United States v. Shell Oil Co. (McColl)*, 281 F.3d 812 (9th Cir.2002), 281 F.3d 812, 2002 Daily Journal D.A.R. 1691. That case analyzes arranger liability in the context of a party who never owned the chemicals and never had

any control over their disposition. "There is no bright-line test ... for a broad theory of arranger liability under § 9602(a)(3). Rather we are required to sort through the fact patterns of the decided cases in order to find similarities and dissimilarities to the fact patterns of our case." The court distinguished *Aceto*, where pesticide manufacturers shipped active pesticide ingredients to Aidex, which blended them to formulate commercial grade pesticide, then sold the pesticide to the manufacturers' customers or shipped it back to the manufacturers. Inherent in the formulation process were spills, equipment cleaning and mixing and grinding operations. In *McNoll*, the United States never owned any raw materials or intervening products. Nor did it contract out the waste-producing step of formulation. Here, Shell sold the chemical products outright for resale, FOB shipping point. It still had control when the chemicals spilled or otherwise were released into the environment on delivery, unloading and transfer at the D-D tank.

384. The sales transactions were ones in which the generation of waste was inherent. That Shell could foresee more spills or releases from washing of application equipment by B & B does not give Shell the requisite control over later B & B formulating, reloading, application and cleanup operations when B & B sold D-D to its customers or applied it for customers. *McColl* rejected an "authority to control" standard instead of "actual control." It is the "obligation" to exercise control over hazardous waste disposal, not the mere ability or opportunity to control the disposal of hazardous substances, that makes an entity an arranger. Shell did not own or operate the Site.

385. "[A] transaction is not beyond the reach of section 107(a) (3) simply because it is cast in the form of a sale [of a useful product]." *Cadillac*

Fairview/California Inc., 41 F.3d at 566; *see also Catellus*, 34 F.3d at 752; *Aceto Agric. Chems. Corp.*, 872 F.2d at 1381. "The question remains whether in light of all the circumstances the transaction involved an arrangement for disposal or treatment of a hazardous waste." *Id.*; *see Catellus*, 34 F.3d at 752; *Louisiana-Pacific Corp.*, 24 F.3d at 1570-71; *Jones-Hamilton*, 973 F.2d at 695; *Florida Power & Light*, 893 F.2d at 1318; *Aceto*, 872 F.2d at 1381.

386. Although arranger liability can attach "to parties that do not have active involvement regarding the timing, manner or location of disposal," *CPC Int'l, Inc. v. Aerojet-General Corp.*, 759 F.Supp. 1269, 1279 (W.D.Mich.1991), there must be some nexus between the potentially responsible party and the disposal of the hazardous substance. *See id.* at 1278; *see also Murtha*, 958 F.2d at 1199; *General Elec. Co. v. Aamco Transmissions, Inc.*, 962 F.2d 281, 286-87 (2d Cir. 1992); *State of California v. Verticare Inc.*, 1993 WL 245544 at *7 (N.D.Cal. Mar. 1, 1993).

387. This nexus is premised upon the potentially liable party's conduct with respect to the disposal or transport of hazardous wastes. *See* 42 U.S.C. § 9607(a); *General Elec. Co.*, 962 F.2d at 286; *Verticare Inc.*, 1993 WL 245544 at *7 ("The nexus requirement turns on whether the potentially liable party 'assumed responsibility for determining [the] fate' of the hazardous substances."); *CPC Int'l, Inc.*, 759 F.Supp. at 1278.

388. Control is a necessary factor in every case of arranger liability in the Ninth Circuit, although not in the Eighth Circuit, if ownership of the hazardous substance is shown. *See United States v. Hercules, Inc.*, 247 F.3d 706, 720 (8th Cir.2001) (distinguishing NEPACCO, 810 F.2d 743, where defendant had no ownership in the hazardous substance and no authority

to control the hazardous substances); *see also United States v. TIC Investment Corp.*, 68 F.3d 1082, 1087-88 (8th Cir.1995) (holding that a finding of arranger liability requires either control over, or "some level of participation in," activities related to the arrangement of hazardous waste disposal).

389. Here, Shell was an active participant in the D-D shipment, delivery and receiving process at Arvin with knowledge that spills and leaks of hazardous D-D were inherent and inevitable. Such spills and leaks occurred throughout the period Shell sold D-D to B & B. Shell required and controlled the transport of D-D by tanker trucks from the GATX-San Pedro terminal to B & B.

390. Specific intent to "arrange for disposal" is not required; only acquiescence in the process. *See Florida Power & Light Co. v. Allis Chalmers Corp.*, 893 F.2d 1313, 1318 (11th Cir.1990); *see also Reading Co. v. City of Philadelphia*, 823 F.Supp. at 1237. A significant release of a hazardous substance is not a prerequisite to finding arranger liability. *See A & W Smelter and Refiners, Inc. v. Clinton*, 146 F.3d 1107, 1110 (9th Cir.1998); *B.F. Goodrich*, 99 F.3d at 516; *United States v. Iron Mountain Mines*, 812 F.Supp. 1528, 1549 (E.D.Cal.1992). Because contamination often results from the accumulation of insignificant harms, a defendant does not escape liability by arguing that minuscule releases were "not really that bad" compared to those of everyone else. *See Mid Valley Bank v. North Valley Bank*, 764 F.Supp. 1377, 1386 (E.D.Cal.1991) ("contribution of a small amount to a potentially large indivisible harm does not affect the defendant's liability").

391. Whether a defendant provided a "spillage allowance" is not dispositive. *See Lewin Metals Corp. v. Parr-Richmond Terminal Co.*, 781 F.Supp. 1452, 1453

(N.D.Cal.1991) (even if the defendant did not include extra pesticide as a "spillage allowance," there was a triable issue as to whether the defendant anticipated pesticide loss in the formulation process); *accord Verticare Inc.*, 1993 WL 245544 at *10 n. 10.

392. "While factors such as a party's knowledge (or lack thereof) of the disposal, ownership of the hazardous substances, and intent are relevant to determining whether there has been an 'arrangement' for disposal, they are not necessarily determinative of liability in every case." *South Florida Water Mgmt. Dist.*, 84 F.3d at 407. The determination as to whether a supplier may have "otherwise arranged for disposal" must be made on a case by case basis. *See Florida Power & Light*, 893 F.2d at 1317.

393. In *United States v. Aceto Agricultural Chemicals Corp.*, 699 F.Supp. 1384, 1388 (S.D.Iowa 1988), *aff'd*, 872 F.2d 1373 (8th Cir. 1989), a pesticide manufacturer was held potentially liable for the cost of cleaning up a pesticide formulator's site, where the manufacturer arranged to have its product formulated and packaged into commercial grade pesticide, knowing that the generation of hazardous waste due to spills and cleaning of equipment was inherent in the formulation process. *See id.* at 1387. The court reasoned that "an arrangement based on acquiescence to certain inevitable effects can be considered an arrangement for such effects." *Id.* at 1388. The Eighth Circuit explained a defendant could be liable as an arranger even if it had no authority to control the formulator's operations because the defendant retained ownership of the pesticides throughout the formulation process and "waste [was] generated and disposed of contemporaneously with the process." *Aceto Agric. Chems. Corp.*, 872 F.2d at 1381-82; *see also Jones-Hamilton Co. v. Beazer Materials & Servs., Inc.*, 973

F.2d 688, 695 (9th Cir.1992) (parties "arranged for disposal" of toxic substances where agreement between parties contemplated 2% spillage of materials and formulator retained ownership of the materials); *Levin Metals Corp. v. Parr-Richmond Terminal Co.*, 781 F.Supp. 1448, 1450-52 (N.D.Cal.1991) (defendant's summary judgment motion denied for the same reason); *United States v. Velsicol Chem. Corp.*, 701 F.Supp. 140, 142-43 (W.D.Tenn.1987); *Burlington N. R.R. Co. v. Woods Indus., Inc.*, 815 F.Supp., 815 F.Supp. 1384, 1392 (E.D.Wash.1993) (causing the waste to be dispersed across the site amounts to arranging for disposal).

394. In *Jones-Hamilton*, a chemical formulator agreed to formulate raw materials provided by the chemical company into wood preservation compounds. The Ninth Circuit determined that the chemical company retained ownership over all materials it supplied the formulator, materials including substances that were classified as hazardous by CERCLA. The Appeals Court found that the chemical company "arranged for disposal" of toxic substances within the meaning of CERCLA, where the agreement between the parties contemplated 2% spillage of materials.

395. Following the reasoning of *Jones-Hamilton* and *Aceto Agricultural*, other courts have found that arranger liability may attach if the defendants knew or should have known that generation of hazardous waste was an inherent part of the pesticide delivery process, and retained ownership of the pesticides, such that it could be inferred that they had the authority to control the work in process. *See South Florida Water Mgmt. Dist. v. Montalvo*, 84 F.3d 402, 406-407 (11th Cir.1996) (arranger liability proper where defendants knew, or should have known, that the generation of hazardous waste was an inherent part of pesticide spraying); *State*

of California v. Verticare Inc., 1993 WL 245544 at *8-9 (arranger liability proper where defendants knew or should have known that generation of hazardous waste was inherent in process of delivering and picking up pesticides and where defendants retained ownership of pesticides implying authority to control process); *Levin Metals Corp. v. Parr-Richmond Terminal Co.*, 781 F.Supp. 1448, 1450-52 (N.D.Cal. 1991) (arranger liability may attach where parties knew that generation of hazardous waste was inherent in formulation process and chemical company retained ownership of chemicals, and authority to control the work in process); *United States v. Velsicol Chem. Corp.*, 701 F.Supp. 140, 142-43 (W.D.Tenn.1987); *Burlington N. Railroad Co., v. Woods Indus., Inc.*, 815 F.Supp., 815 F.Supp. 1384, 1392 (E.D.Wash.1993) (causing the waste to be dispersed across the site amounts to arranging for disposal). Here the evidence preponderates to establish that Shell did not retain ownership of its products after delivery to B & B. It retained control over delivery of its products to the Site. Once Shell's products were placed into storage at B & B's facilities, B & B managed and controlled all Shell chemicals at the Site.

396. Arranger liability has also been found, despite the absence of any "ownership" interest at the time of disposal, where a spill or disposal occurs in connection with an arranged-for service, and the spill or disposal is known to be a natural, probable or inherent consequence of the service. *See United States v. Cello-Foil Prods., Inc.*, 100 F.3d 1227, 1233 (6th Cir.1996); *Redwing Carriers, Inc. v. Saraland Apartments, Inc.*, 94 F.3d 1489, 1512 (11th Cir.1996); *Mathews v. Dow Chem. Co.*, 947 F.Supp. 1517, 1525 (D.Colo.1996); *see also Cadillac Fairview/California Inc. v. United States*, 41 F.3d 562, 565 (9th Cir.1994); *Aceto Agric.*

Chems. Corp., 872 F.2d at 1378-82; *E.S. Robbins Corp., v. Eastman Chem. Co.*, 912 F.Supp. 1476, 1487 (N.D.Ala.1995); *Reading Co. v. City of Philadelphia*, 823 F.Supp. 1218, 1237 (E.D.Pa.1993).

1. *Shell is Liable as an Arranger*

397. The known, anticipated, and inevitable leakage of D-D during the delivery and unloading process is a "disposal" within the meaning of CERCLA Section 101(32). "Disposal" expressly includes any "leaking"," spilling" or "placing" of the hazardous substance such that it may enter the environment. The spilling and placing of D-D in drip buckets *and* pans under the tanker's spigot, from which spills and leakage resulted, is a "disposal" because it is the "spilling" or "placing" of a hazardous substance in a manner that causes it to enter the environment. The transfer process and unloading of D-D from tanker trucks to the B & B storage tanks inevitably entailed leakage and spillage. The process was effectively controlled and arranged for by Shell.

398. Under the "Conditions of Sale" between B & B and Shell, Shell determined and arranged for the means and methods of delivery of the D-D to the Arvin plant. It also retained title to D-D. *See* Ex. 1199, Bates No. 002907 ("Seller may deliver any Product in any delivery equipment, by any means of transportation and from any shipping point that Seller may select ....").

399. Shell hired common carrier delivery trucks to haul D-D to B & B's Arvin plant, that Shell required to have certain equipment to transfer D-D into bulk storage and to minimize spillage. *See* Findings of Fact ("FOF") at ¶¶ 149-150. Before the early 1980s, Shell required the tanker truck driver to have a 30 foot hose and certain couplings and other equipment. The Shell manual which B & B was required to follow, detailed

loading and unloading procedures and specified the protective equipment employees had to wear to load and unload D-D. *See* FOF at ¶¶ 161-162. By the early 1980s, Shell dictated that B & B personnel unload the tanker truck and purchase the 30 foot hose among other unloading equipment. As part of the "Conditions of Sale," Shell also required B & B to "furnish and maintain facilities for receiving and storing all Products delivered, which are safe, adequate and in compliance with all applicable governmental requirements," and to "unload each delivery promptly and at [B & B's] own risk and expense (including any demurrage due to delay in unloading)." *See* Ex. 1199, Bates No. 002907.

400. As part of its early 1960s distribution arrangements, Shell required B & B to store highly corrosive D-D in bulk tanks, at a time when the distributors did not have the equipment or capital to deal with the corrosive D-D. It was known that spills and leaks would and did result.

401. Spills of D-D were expected and inherent in the delivery and unloading process that Shell arranged. *See* FOF at ¶¶ 132-142. Shell understood this. *See* FOF at ¶¶ 146-148, 162. Shell knew that spillage of D-D onto the ground posed a substantial threat of groundwater contamination. See FOF at ¶ 157. Shell's handling instructions were not limited to the delivery of D-D, but also included instructions on how any chemical spills were to be handled. *See* FOF ¶ 148. Shell had the authority to control, and did substantially control, the delivery and unloading process of D-D to B & B at the Site.

402. Whether Shell retained title to the spilled material at the time of each spill is not determinative. An express retention of title to hazardous substances during some service performed on the substances only underscores the owner's ability to control the process,

see Aceto Agric. Chems. Corp., 872 F.2d at 1378-82 (manufacturer owned pesticide ingredients which while formulated inherently generated waste through spills, cleaning of equipment, and mixing and grinding operations). The Ninth Circuit has made clear, CERCLA does not require an arranger to have title to the hazardous substances at the moment of disposal. *See Cadillac Fairview/Cal., Inc. v. United States*, 41 F.3d 562, 566 (9th Cir.1994) (rubber companies that transferred contaminated styrene to Dow Chemical for reprocessing are arrangers); *Catellus Dev. Corp. v. United States*, 34 F.3d 748, 752 (9th Cir.1994) (automotive parts company that sent used car batteries to a battery-cracking plant for lead recovery and disposal is an arranger); *see also United States v. Northeastern Pharm. & Chem. Co.*, 810 F.2d 726, 743 (8th Cir.1986), *cert. denied*, 484 U.S. 848, 108 S.Ct. 146, 98 L.Ed.2d 102 (1987); *United States v. Bliss*, 667 F.Supp. 1298, 1307 (E.D.Mo.1987).

403. Section 107 refers to direct arranger liability for a "person who by contract, agreement, or otherwise arranged for disposal ... of hazardous substances *owned or possessed by such person*, by any other party or entity, at any facility owned or operated by another party or entity and containing such hazardous substances." 42 U.S.C. § 107(a)(3) (emphasis added). It requires an arranger to have "control" over a process that releases waste. *Shell Oil Co.*, 281 F.3d at 822. The underscored language refers to ownership or possession by a person making an arrangement *at the time of the arrangement*, not at the time of disposal. Otherwise, the Government would seldom be able to establish arranger liability because "[r]equiring continuity of ownership or control for section 107(a)(3) liability would make it too easy for a party, wishing to dispose of a hazardous substance, to escape by a sale its

responsibility to see that the substance is safely disposed of." *Catellus Dev. Corp.*, 34 F.3d at 752; *see also Gould v. A & M Battery and Tire Serv.*, 954 F.Supp. 1020, 1997 WL 82707 (M.D.Pa. Jan.29, 1997); *United States v. Bliss*, 667 F.Supp. 1298, 1307 (E.D.Mo.1987) (a party need not have actual control or ownership over the hazardous waste in order for § 107(a)(3) liability to attach)." [A]rranger liability 'is not so facilely circumvented' by simply characterizing arrangements for disposal as sales." *Verticare*, 1993 WL 245544 at *9; *New York v. General Elec. Co.*, 592 F.Supp. 291, 297 (N.D.N.Y. 1984); *United States v. Conservation Chem. Co.*, 619 F.Supp. 162, 239-40 (W.D.Mo.1985).

404. Shell owned the D-D when it arranged for the delivery and unloading at the B & B Site, knowing that spills and leaks were inherent and would occur in the D-D delivery-unloading-storage process. *See* FOF ¶¶ 149-150.

405. Shell's intent in its delivery of D-D is in part expressed in each delivery contract, which was marked "FOB destination" to B & B's Arvin Site. Determining legal title and "[i]nterpreting unambiguous contractual provisions and determining their legal effect is normally an exercise that involves questions of law." *Solmitz v. United States*, 640 F.2d 1089, 1091 (9th Cir.1981); *see E.P. Hinkel & Co., Inc. v. Manhattan Co.*, 506 F.2d 201, 204 (D.C.Cir. 1974); *C.H. Codding & Sons v. Armour and Co.*, 404 F.2d 1, 8 (10th Cir.1968).

406. As part of the "Conditions of Sale," B & B was required to "furnish and maintain facilities for receiving and storing all Products delivered, which are safe, adequate and in compliance with all applicable governmental requirements ...." Ex. 1199 at p. 7. This was part of an "arrangement" by Shell for delivery and transfer of D-D to B & B at the Arvin Site. For

instance, if a tanker truck carrying D-D drove to the Arvin Site, readied hoses and buckets for unloading, and unloading of the D-D began, if it became apparent that the bulk storage tank was inadequately maintained "for receiving and storing" the delivered D-D, Shell had the right to have the tanker truck return to the GATX terminal in San Pedro. D-D was corrosive, ate through mild steel, and caused unpredictable tank failures. *See* FOF ¶ 105. If B & B failed to comply with a condition of sale, *e.g.*" furnish[ing] and maintain[ing] facilities for receiving and storing all Products delivered," legal title would not pass to B & B, it would remain in Shell.

B & B did not necessarily obtain legal title to the D-D simply because the D-D tanker truck entered the Arvin Site. Although B & B gained "stewardship" once Shell's D-D tanker arrived on the Arvin Site, Shell had delivery and transfer requirements from the tankers to B & B's bulk storage, which Shell monitored. *See* Haverland Dep. at 2208:24-2209:1.

407. At trial, Mr. Haverland did not suggest that B & B had legal title to the D-D once the common carrier truck turned onto B & B's driveway. Mr. Haverland explained Shell's intent that B & B was to retain stewardship over the D-D upon arrival at the facility:

> THE COURT: What he is, I think, expressing is a matter of intent, and the seller can state its intent. Whether or not that's the legal fact is a different question. But, in other words, the seller can say," We deliver to a common carrier with the instruction and our invoice provides that this is FOB destination, we mean when it leaves the highway and it turns into your driveway, it's your product." Stewardship doesn't necessarily say legal title, but what it does say is, "You handle it now."

Is that—

Mr. Haverland: That's correct.

THE COURT:—what Shell intended?

Mr. Haverland: Yes.

Haverland test. 2209:9-22.

408. Shell had the authority under the "Conditions of Sale" to determine the means and methods of delivery and unloading of the D-D. Shell knew that spills were inherent in the transfer to storage tank, delivery-unloading process. Shell knew that the spills of D-D onto the ground posed a substantial threat of groundwater contamination. Under the totality of the circumstances, Shell is liable for arranging to dispose of D-D, a hazardous substance which was released at the Site causing the need for response within the meaning of CERCLA.

D. *Useful Product Doctrine*

409. Some courts have held that a sale of a useful product that contains hazardous substances is not an arrangement for disposal. *See Florida Power & Light Co. v. Allis-Chalmers Corp.*, 893 F.2d 1313. 1318-19 (11th Cir. 1990), under the "useful product doctrine." *See California v. Summer Del Caribe, Inc.*, 821 F.Supp. 574 (N.D.Cal. 1993) (citing cases in support of this doctrine); *KN Energy, Inc. v. Rockwell Int'l Corp.*, 840 F.Supp. 95 (D.Colo. 1993); *Chesapeake & Potomac Tel. Co. v. Peck Iron & Metal Co.*, 814 F.Supp. 1269, 1275 (E.D.Va. 1992); *Prudential Ins. Co. v. United States Gypsum*, 711 F.Supp. 1244, 1254 (D.N.J. 1989).

410. Shell contends the useful product doctrine bars CERCLA arranger liability. The D-D Shell sale to B & B of a "useful" pesticide product intended to be resold to farmers and sub-distributors in the region for applications to soil. *See* Doc. 1318 ("Shell Oil Company's Proposed Conclusions of Law"), 6:21-24

("[B]oth B & B and Shell intended that D-D would be used for ... [its intended] purpose ... as a soil fumigant to control nematodes. D-D was useful and valuable (as opposed to being a waste or byproduct).").

411. In confronting an identical argument in *Cadillac Fairview/California Inc.*, the Ninth Circuit rejected such an analysis and found the useful product doctrine inapplicable.

> The rubber companies emphasize the fact that contaminated styrene had value on the market, and that Dow credited their accounts seven cents for each pound they sent to Dow for treatment. They seek to avoid arranger liability under section 107(a)(3) by relying upon cases holding that sale of a hazardous substance in the form of a useful product is not an arrangement for disposal or treatment within the meaning of the section. *See, e.g., Florida Power & Light*, 893 F.2d at 1317. As these authorities recognize, however, a transaction is not beyond the reach of section 107(a)(3) simply because it is cast in the form of a sale. *Catellus*, 34 F.3d at 752. *The question remains whether in light of all the circumstances the transaction involved an arrangement for disposal or treatment of a hazardous waste. See id.; ASARCO*, 24 F.3d at 1570-71; *Jones-Hamilton*, 973 F.2d at 695; *Florida Power & Light*, 893 F.2d at 1318; *Aceto*, 872 F.2d at 1381.

Id. at 566; see also *Louisiana-Pacific Corp.*, 24 F.3d at 1570-71. Despite the sale to Dow of a "useful product" containing hazardous substances, a trier of fact could find the purpose of the transactions to have been an arrangement for the treatment of contaminated styrene, thus triggering CERCLA arranger liability. *See Cadillac Fairview/California Inc.*, 41 F.3d at 566.

412. Several district courts within the Ninth Circuit have also found the useful product doctrine inapplicable, because the contemplated, or anticipated, spilled product is not a useful product. *See Courtalds Aerospace, Inc. v. Huffman,* 826 F.Supp. 345, 353 (E.D.Cal.1993) ("Plaintiff is not alleging that harm was done to its land by the ash which was sold but by the ash which was allowed to blow away .... No productive use existed when ash was allowed to escape into the air."); *Levin Metals v. Parr-Richmond Terminal,* 781 F.Supp. 1448, 1452 n. 3 (N.D.Cal.1991) ("Here, the substance at issue is the DDT that was released into the environment, not DDT that was put to productive use."), *clarified on other grounds,* 781 F.Supp. 1452 (N.D.Cal.1991).

413. The Fifth Circuit has also recognized the limited applicability of the useful product doctrine's rationale. "Were we to accept the defendants' argument that ... excludes from liability any product which is not a waste, the exception would effectively remove an entire class of environmental threats from CERCLA's reach. Any accidental explosion, spill, or release of a useful industrial chemical would be excluded from the statute regardless of the threat posed to the public and the environment. CERCLA would effectively become nothing more than a waste dump statute." *Uniroyal Chem. Co. v. Deltech. Corp.,* 160 F.3d 238, 257 (5th Cir. 1999) (discussing the "consumer product exception").

414. "CERCLA liability is possible for the disposal of wastes that are also [useful] products." *Louisiana-Pacific Corp. v. ASARCO Inc.,* 24 F.3d 1565, 1575 (9th Cir.1994) (citing *United States v. Conservation Chem. Co.,* 619 F.Supp. 162, 240-41 (W.D.Mo.1985) (sale of lime slurry and fly ash for cleanup of environmental site); *State of New York v. General Elec. Co.,* 592

F.Supp. 291, 297 (N.D.N.Y.1984) (sale of used transformer oil to dragstrip for use in controlling dust); *United States v. A & F Materials Co., Inc.*, 582 F.Supp. 842, 844-45 (S.D.Ill.1984) (sale of caustic solution to neutralize acidic oil).

415. The analysis does not resolve to an either-or finding. Arranger liability "is not to be so facilely circumvented" as to simply characterize arrangements for disposal as sales of a useful product. *See New York v. General Elec. Co.*, 592 F.Supp. 291, 297 (N.D.N.Y.1984); *Conservation Chem. Co.*, 619 F.Supp. at 239-40 (holding that even sales "in the normal course of business" of a "useful product" can give rise to CERCLA liability, if they result in the placement of hazardous substances at a facility). "[P]ersons cannot escape liability by 'contracting away' their responsibility or alleging that the incident was caused by the act or omission of a third party." *New York v. General Elec. Co.*, 592 F.Supp. 291, 297 (N.D.N.Y.1984).

416. Section 9607(a) of CERCLA explicitly applies to the "disposal or treatment of hazardous *substances*," not merely to the disposal or treatment of hazardous *waste*. 42 U.S.C. § 9607(a)(3) (emphasis added); *see also Cadillac Fairview/California Inc.*, 41 F.3d at 565; *Verticare*, 1993 WL 245544 at *9; *State of California v. Summer Del Caribe, Inc.*, 821 F.Supp. 574, 579 (N.D.Cal. 1993). Section 6903(3) of the Solid Waste Disposal Act only defines the actions of "disposal," not the objects of those actions, *i.e.*, the materials to be disposed of or treated. *See Summer Del Caribe*, 821 F.Supp. at 579; *Verticare*, 1993 WL 245544 at *9.

417. Reading CERCLA to apply only to hazardous wastes, and not to the broader definition of hazardous substances, is contrary to the intent of the statute and moots important portions of CERCLA. CERCLA

legislative history does not indicate Congress desired to limit the scope of private actions to encompass only hazardous wastes rather than all hazardous substances. *See CP Holdings v. Goldberg-Zoino & Asocs.*, 769 F.Supp. 432, 437 (D.N.H.1991) (criticizing *Stevens Creek); Summer Del Caribe, Inc.*, 821 F.Supp. at 579.

418. The one Ninth Circuit case, *pre-Cadillac/Fairview California*, that holds "disposal" refers only to "the affirmative act of discarding a substance as "waste," and not to the productive use of the substance," explained its substitution of the term "hazardous substance" for "hazardous waste," noting "in the context of CERCLA, hazardous substances are generally dealt with at the point when they are about to, or have become, wastes." *See 3550 Stevens Creek Assocs. v. Barclays Bank*, 915 F.2d 1355, 1362 (9th Cir.1990).*3550 Stevens Creek Associates* considered a voluntary removal of asbestos during remodeling of a commercial building, where recovery was sought against a bank that owned the building when the asbestos materials were installed. There was no evidence that asbestos built into the building's structure could enter the environment or be emitted into the air. Even if the asbestos became brittle, any resulting hazard would remain inside the building and could not travel into the environment outside the building. *See* 915 F.2d at 1361.

419. *3550 Stevens Creek Associates* is distinguishable. There, only "productive" asbestos installed in the building was considered, not the contemplated, or anticipated," waste" asbestos that potentially would be released during its removal from the building. *See Levin Metals Corp. v. Parr-Richmond Terminal Co.*, 781 F.Supp. 1448, 1452 n. 3 (N.D.Cal.1991) (distinguishing *3550 Stevens Creek Associates* on similar grounds: "Here, the substance at

issue is the DDT that was released into the environment, not DDT that was put to productive use."); *Verticare Inc.*, 1993 WL 245544 at *9, *10 n. 12 ("At issue here are the pesticides which contaminated the Verticare site, not the pesticides that were put to productive use by the growers.").

420. In the Ninth Circuit, the useful product doctrine has been rejected when the hazardous substance is released under conditions where it can serve no useful purpose. The D-D spilled or leaked onto the ground during the delivery-unloading process could only be waste of a hazardous substance; it had no useful purpose. The "useful product" doctrine does not exonerate Shell.

E. *Third-Party Defense*

421. Shell has not established the third-party defense. B & B and Shell had a general sales agreement whereby B & B acted as a distributor of Shell agricultural chemical products for sub-distributors or local farmers in the area. Spills and leaks were inherent in the delivery-unloading for bulk storage process that Shell arranged and controlled by its sales contracts. Spills, regularly and inevitably, occurred during the unloading of D-D, unhooking of the hoses and coupling and uncoupling of the rigs. The amount of individual D-D spills varied from a few cup-fulls to 5 gallons per spill. Although buckets were often placed underneath each hose end or fittings to prevent residual spills or leaks, the bucket sometimes became unstable and would tip over, or would not contain overflow from the hose, or would often be spilled almost every time by drivers when they "walked the bucket."

422. Each of these spills was an expected result of the contract for the D-D delivery and sale to B & B by

Shell. On this record, cannot invoke third-party defense.

VII. INCURRED COSTS & CONSISTENCY WITH NCP

423. CERCLA § 107 provides for the recovery of the following costs:

> (A) *all costs of removal or remedial action* incurred by the United States Government or a State ... not inconsistent with the national contingency plan;
>
> (B) any other necessary costs incurred by any other person consistent with the national contingency plan;
>
> (C) damages for injury to, destruction of, or loss of natural resources, including the reasonable costs of assessing such injury, destruction, or loss resulting from such a release; and
>
> (D) the costs of any health assessment or health effects study carried out under section 9604(i) of this title.

42 U.S.C. § 9607(a)(4) (emphasis added); *see United States v. Kramer*, 913 F.Supp. 848, 867 (D.N.J. 1995).

424. Courts have emphasized that consistency with the National contingency Plan ("NCP") is "the *only* criterion for the recoverability of response costs under CERCLA." *Laidlaw Waste Systems, Inc. v. Mallinckrodt, Inc.*, 925 F.Supp. 624, 632 (E.D.Mo.1996) (citation and quotation omitted); *United States v. American Cyanamid Co.*, 786 F.Supp. 152, 161 (D.R.I.1992).

A. *Presumption of Consistency and Costs*

425. The Defendants bear the burden of proof to show inconsistency with the NCP when the United States or a state government seeks recovery of CERCLA costs. *See United States v. Chapman*, 146 F.3d 1166, 1170 (9th Cir.1998) ("When the United

States is seeking recovery of response costs, consistency with the NCP is presumed."); *United States v. Hardage*, 982 F.2d 1436, 1442 (10th Cir.1992); *Northeastern Pharm. & Chem. Co.*, 819 F.2d at 747, *cert. denied*, 484 U.S. 848, 108 S.Ct. 146, 98 L.Ed.2d 102 (1987).

a. The factors that Congress intended the EPA to consider when selecting a remedy under CERCLA are set forth in the National contingency Plan ("NCP"). *See* 42 U.S.C. § 9604(a)(1). The NCP is a set of regulations promulgated by the EPA that "establishes procedures and standards for responding to releases of hazardous substances." *County Line Inv. Co. v. Tinney*, 933 F.2d 1508, 1511 (10th Cir.1991).

b. The NCP's purpose "is to give some consistency and cohesiveness to response planning and actions." *Bunger v. Hartman*, 797 F.Supp. 968, 973 (S.D.Fla. 1992); *see also Greene v. Product Mfg. Corp.*, 842 F.Supp. 1321, 1324 (D.Kan.1993)." The NCP is designed to make the party see king response costs choose a cost-effective course of action to protect the public health and the environment." *Washington State Dep't of Transp. v. Washington Natural Gas Co.*, 59 F.3d 793, 802 (9th Cir.1995).

c. The EPA is generally entitled to all costs, even if unreasonable or unnecessary unless the defendant proves that such costs are inconsistent with the NCP. *See Bell*, 3 F.3d at 906. In *United States v. Northeastern Pharm. & Chem. Co., Inc.*, 810 F.2d 726 (8th Cir.1986), the court found that § 107(a)(4)(A) does not refer to "all reasonable costs" but simply to "all costs," and concluded that "'all costs' incurred by the government that are not inconsistent with the NCP are conclusively presumed to be reasonable." *Id. United States v. Hardage*, 982 F.2d 1436 (10th Cir.1992), establishes," [a]s long as the government's choice of

response action is not inconsistent with the NCP, its costs are presumed to be reasonable and therefore recoverable." *Id.* at 1443. *Cf. United States v. R.W. Meyer, Inc.*, 889 F.2d at 1504 (emphasis added) ("to the extent cleanup actions are necessary, ... the statute contemplates that those responsible for hazardous waste at each site must bear the full cost of cleanup actions").

426. Only substantial, not strict compliance with the NCP is required. *See Wickland*, 792 F.2d at 891; *NL Indus.*, 792 F.2d at 898-99; *Louisiana-Pacific Corp. v. Asarco, Inc.*, 24 F.3d *1565*, 1576 (9th Cir.1995), *cert. denied*, 513 U.S. 1103, 115 S.Ct. 780, 130 L.Ed.2d 674 (1995). Variance with the NCP is not necessarily a complete defense to liability for costs, because a defendant must still show that the cleanup caused by the variance with the NCP resulted in excess costs for which the defendant should not be found responsible. *See O'Neil v. Picillo*, 682 F.Supp. 706, 729 (D.R.I.), *aff'd*, 883 F.2d 176 (1st Cir.1989), *cert. denied*, 493 U.S. 1071, 110 S.Ct. 1115, 107 L.Ed.2d 1022 (1990).

427. Courts do not review the details of implementation of a response action because the "NCP regulates choice of response actions, not costs." *Hardage*, 982 F.2d at 1443 (emphasis omitted). When making a determination as to inconsistency with the NCP, a court should look to the response action as a whole, rather than to individual costs within that action. *Id.*; *Kramer*, 913 F.Supp. at 866.

B. *Arbitrary and Capricious Standard of Review of CERCLA Costs*

428. To establish that the Government's response action is inconsistent with the NCP, a defendant must establish that the EPA acted arbitrarily and capriciously in choosing a particular response action to

respond to a hazardous waste site. *See* 42 U.S.C. § 9613(j)(2); *U.S. v. Hardage*, 982 F.2d at 1442; *NEPACCO*, 810 F.2d at 748; *Bell*, 3 F.3d at 905; *Northeastern*, 810 F.2d at 747; *United States v. R.W. Meyer, Inc.*, 889 F.2d 1497, 1508 (6th Cir.1989), *cert. denied*, 494 U.S. 1057, 110 S.Ct. 1527, 108 L.Ed.2d 767 (1990); *Ottati & Goss*, 630 F.Supp. at 1395; *United States v. Conservation Chem. Co.*, 619 F.Supp. 162, 186 (W.D.Mo.1985); *United States v. Ward*, 618 F.Supp. 884, 899 (E.D.N.C.1985). An agency's decision is arbitrary and capricious if:

> The agency has relied on factors which congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it would not be ascribed to a difference in view or the product of agency expertise.

Inland Empire Public Lands Council v. Glickman, 88 F.3d 697 (9th Cir.1996) (quoting *Motor Vehicle Mfrs. Ass'n v. State Farm*, 463 U.S. 29, 103 S.Ct. 2856, 77 L.Ed.2d 443 (1983)).

429. Whether a response action is arbitrary and capricious is a question of law determined on the basis of the *administrative* record. *See* 42 U.S.C. § 9613(j); *Amtreco*, 846 F.Supp. at 1585; *Kelly v. Thomas Solvent Co.*, 790 F.Supp. 719, 727-30 (W.D.Mich.1990). If the response action chosen by the EPA has any rational basis, it is not arbitrary and capricious. *See Adams v. EPA*, 38 F.3d 43, 49 (1st Cir.1994); *see also Brown v. Rauscher Pierce Refsnes, Inc.*, 994 F.2d 775, 779 (11th Cir.1993). The scope of review under the "arbitrary and capricious" standard is therefore narrow, and a court should not substitute its judgment for that of the agency. *See Caribbean Petroleum Corp. v. EPA*, 28

F.3d 232, 234 (1st Cir.1994) (quoting *Motor Vehicles Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43, 103 S.Ct. 2856, 77 L.Ed.2d 443 (1983)).

a Although the arbitrary and capricious standard of review is very lenient, the court is not to substitute its judgment for that of the agency. *See Bell*, 3 F.3d at 905. "Judicial review 'must be based on something more than trust and faith in EPA's experience.'" *American Petroleum Inst. v. EPA*, 661 F.2d 340, 349 (5th Cir.1981) (quoting *Appalachian Power Co. v. Train*, 545 F.2d 1351, 1365 (4th Cir.1976)); *see Bell*, 3 F.3d at 905. The agency must examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made. *See Motor Vehicles Mfrs. Ass'n*, 463 U.S. at 43; *Bell*, 3 F.3d at 905.

b. Even if a court finds EPA's response action arbitrary and capricious, however, the remedy is not to disallow all costs, but rather to disallow only those costs that are inconsistent with the NCP. *See* 42 U.S.C. § 9613(j)(3). The inquiry in a cost recovery action brought by the United States always returns to the basic question of whether the response actions are not inconsistent with the NCP. *See United States v. Fairchild Indus., Inc.*, 766 F.Supp. 405, 413 n. 12 (D.Md.1991).

C. *Review of Cost and Site Remedy Evidence*

430. In determining whether EPA's decision was arbitrary and capricious, a court should review the information EPA relied on, not what EPA failed to learn. *See In the Matter of Bell Petroleum Servs., Inc.*, 3 F.3d 889, 905 n. 20 (5th Cir.1993). The EPA's post-hoc rationalizations in justification of its decision are not considered, nor those unsupported by the administrative record. *See State Farm*, 463 U.S. at 50,

103 S.Ct. at 2870. "The only information relevant to our determination of whether the EPA's decision was arbitrary and capricious is the information that the EPA relied on in making that decision. Events occurring subsequent to the decision cannot be relied upon to support it." *Bell*, 3 F.3d at 905 n. 20. The rationale for this rule is that "the question is not whether the EPA was right or wrong, but whether its decision was made without caprice." *ELF Atochem North America, Inc. v. United States*, 882 F.Supp. 1499, 1502 (E.D.Pa.1995); *see also Asarco, Inc. v. EPA*, 616 F.2d 1153, 1160 (9th Cir.1980).

a. If EPA examined the relevant data and articulated a satisfactory explanation for its action, including a rational connection between the facts found and the choice made, the action is not arbitrary and capricious. *See Bell Petroleum*, 3 F.3d at 900.

b. Because determining the appropriateness of a response action "involves specialized knowledge and expertise, the choice of a particular cleanup method is a matter within the discretion of the EPA." *United States v. Northeastern Pharm. & Chem. Co.*, 810 F.2d 726, 748 (8th Cir.1986), *cert. denied*, 484 U.S. 848, 108 S.Ct. 146, 98 L.Ed.2d 102 (1987); *United States v. Akzo Coatings of America, Inc.*, 949 F.2d 1409, 1424 (6th Cir.1991). Otherwise stated, a court should not substitute a layman's judgment for that of the EPA. *Hardage*, 982 F.2d at 1442; *United States v. Gurley Refining Co.*, 788 F.Supp. 1473, 1481 (E.D.Ark.1992), *aff'd in part and rev'd in part on other grounds*, 43 F.3d 1188 (8th Cir.1995), *cert. denied*, 516 U.S. 817, 116 S.Ct. 73, 133 L.Ed.2d 33 (1995); *Ward*, 618 F.Supp. at 900. The fact that a particular response action was not the best choice in hindsight does not make the response action arbitrary and capricious. *Kelly*, 790 F.Supp. at 728.

D. *Scientific Opinion-Deference to the EPA*

431. Although courts often rely on expert testimony to understand technical or arcane issues, a court should not use such "outside evidence to determine the rightness or wrongness of the agency decision, but solely to evaluate whether there is anything in the record to support the agency's decision." *ELF Atochem*, 882 F.Supp. at 1503. "EPA is required to act upon the informed scientific opinion of its employees." *Ward*, 618 F.Supp. at 900-01. A court should defer to EPA's decision in the face of conflicting technical data. *See Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 378, 109 S.Ct. 1851, 104 L.Ed.2d 377 (1989); *Akzo Coatings*, 949 F.2d at 1424. "When specialists express conflicting views, an agency must have discretion to rely on the reasonable opinions of its own qualified experts, even if, as an original matter, a court might find contrary views more persuasive." *Marsh*, 490 U.S. at 378. "When examining this kind of scientific determination ... a reviewing court must generally be at its most deferential." *Akzo Coatings*, 949 F.2d at 1424 (quoting *Baltimore Gas & Elec. Co. v. Natural Res. Def. Council, Inc.*, 462 U.S. 87, 103, 103 S.Ct. 2246, 76 L.Ed.2d 437 (1983)); *see also Ward*, 618 F.Supp. at 900-01.

a. The "[amount of] deference an agency decision is due depends in part on such factors as how much deliberation went into reaching it and whether the decision fits with a policy the agency has consistently followed." *A & W Smelter and Refiners, Inc. v. Clinton*, 146 F.3d 1107, 1112 (9th Cir.1998), *citing Atchison, Topeka & Santa Fe R.R. v. Pena*, 44 F.3d 437, 442 (7th Cir.1994), *aff'd sub nom., Bhd. of Locomotive Eng'rs v. Atchison, Topeka & Santa Fe R.R.*, 516 U.S. 152, 116 S.Ct. 595, 133 L.Ed.2d 535

(1996); *Barnett v. Weinberger,* 818 F.2d 953 (D.C.Cir.1987).

b. The EPA is due substantial deference in interpreting and implementing CERCLA-"so long as [its] decisions do not collide directly with substantive statutory commands and so long as procedural corners are squarely turned." *Caribbean Petroleum Corp.*, 28 F.3d at 234 (quoting *Puerto Rico Sun Oil,* 8 F.3d at 77) (other citations omitted); *see generally Chevron U.S.A. v. Natural Res. Def. Council,* 467 U.S. 837, 842-45, 104 S.Ct. 2778, 2781-83, 81 L.Ed.2d 694 (1984).

c. The EPA is entitled to deference with regard to factual questions involving scientific matters in its own area of expertise. *See Puerto Rico Aqueduct & Sewer Auth.*, 35 F.3d at 604 (citations omitted). "Mixed questions of law and fact, at least to the extent that they are fact-dominated, fall under this rubric." *Id.* (citation omitted). Similarly, a court defers to an agency's interpretation of a statute that it is charged with enforcing, and its deference increases when the agency interprets its own regulations. *See id.*

E. *Valid Response Costs; Excessive or Unreasonable Costs*

432. Response costs include, *inter alia,* the costs of investigations, clean-up, sampling, overseeing investigations, security fencing and other restrictive measures, and enforcement activities. *See* 42 U.S.C. § 9601(25); *Cadillac Fairview/California, Inc. v. Dow Chem. Co.*, 840 F.2d 691, 695 (9th Cir.1988); *Wickland Oil Terminals v. Asarco, Inc.*, 792 F.2d 887, 892 (9th Cir.1986). The United States may also recover overhead or indirect costs associated with administering the Superfund program. *See United States v. Iron Mountain Mines, Inc.*, 812 F.Supp. 1528, 1543 (E.D.Cal.1992).

a. Neither CERCLA nor the NCP imposes an "obligation on the United States to minimize its response costs for the benefit of responsible parties who are liable for the costs." *American Cyanamid Co.*, 786 F.Supp. at 152, 161.

b. Proving that costs are unreasonable, excessive or unnecessary does not show inconsistency with the NCP. *See Hardage*, 982 F.2d at 1443; *American Cyanamid Co.*, 786 F.Supp. at 161-62; *United States v. Iron Mountain Mines, Inc.*, 812 F.Supp. 1528, 1543 (E.D.Cal.1992); *Kramer*, 757 F.Supp. at 436. "Cost-effectiveness is a criteria for the EPA *only* when choosing a permanent remedy for a site among competing alternatives.... Once EPA validly chooses a permanent remedy for a site, cost-effectiveness is no longer a viable challenge to the implementation of that remedy." *American Cyanamid Co.*, 786 F.Supp. at 162.

F. *Documentation of Costs*

433. EPA may document its costs by means of cost summaries and EPA payroll reports. *See United States v. Northernaire Plating Co.*, 685 F.Supp. 1410, 1415 (W.D.Mich.1988), *aff'd*, *United States v. R.W. Meyer, Inc.*, 889 F.2d 1497 (6th Cir.1989), *cert. denied*, 494 U.S. 1057, 110 S.Ct. 1527, 108 L.Ed.2d 767 (1990).

a. The Ninth Circuit recognizes the methods employed by the United States to document costs satisfy the requirements of the National Contingency Plan. *See United States v. Chapman*, 146 F.3d 1166 (9th Cir.1998). As the Court stated:

> The EPA's documentation of its response action and costs is consistent with the requirements of the NCP. The administrative record adequately documents the EPA's actions through September 1990, and the declarations, contracts, and action

> memorandum document the actions taken for the remaining period. In addition, the EPA kept extensive records of recovery costs in the form of timesheets, cost estimates, and accountant and attorney declarations. The district court was correct in concluding that the EPA acted consistently with the NCP in maintaining appropriate documentation.

Id. at 1171.

b. Cost documentation that does not contain descriptions of activities performed by EPA personnel is still sufficient to entitle the government to its response costs. *See United States v. Vertac Chem. Corp.*, 33 F.Supp.2d 769 (D.Ark.1998). Failure to provide descriptive documentation does not make the Government's accounting inaccurate. *See United States v. Bell Petroleum Servs., Inc.*, 734 F.Supp. 771, 781 (W.D.Tex.1990) *rev'd on other grounds*, 3 F.3d 889 (5th Cir.1993).

c. Detailed cost summaries of EPA's costs are "sufficient to establish a prima facie case that the government is entitled to its response costs." *United States v. Chromalloy American Corp.*, 158 F.3d 345, 352 (5th Cir.1998). A defendant cannot challenge the government's documentation by making vague claims concerning "the validity of those costs based on the government's evidence." *R.W. Meyer, Inc.*, 889 F.2d at 1508. A defendant must offer "evidence to counter or otherwise challenge the extensive government documentation of its costs." *Id.*

434. The Railroads' accounting attack was premised on general theories of cost accounting, not environmental accounting as described in case law. The attacks ignored well established decisional precedent that validates EPA's CERCLA cost

accounting procedures and protocols. The Railroads' accountant also ignored or refused to acknowledge the EPA's SCORES and CERCLA Superfund site accounting and cost documentation and methods. The entirety of Railroads' claims on EPA's accounting methodology are rejected.

435. A determination of liability does not depend on quantification of a plaintiff's response costs. *See Mottolo,* 695 F.Supp. at 630. Once the United States has shown that a release of a hazardous substance caused the incurrence of some response costs, the defendant is liable. *Id.*

G. *Governments Incurred Response Costs; Governments' Response is Consistent with the NCP*

436. In this case, releases or threatened releases of hazardous substances from the Arvin Site have caused the Governments to perform investigations of the Arvin Site and the groundwater underneath the Site and to incur other costs in responding to releases and threatened releases, evaluating a remedy and commencing implementation of the remedy.

437. EPA investigated to identify the nature and extent of contamination and containment remedies to address highly contaminated ground water in the A-zone.

438. EPA sought to protect the B-zone, which qualifies as a potential source of drinking water. The A-zone remedy faces technical challenges, but it is not arbitrary.

439. The Administrative Record delineates EPA's reasoning for selecting the interim A-zone excavation and capping remedy. Defendants' attacks on the science utilized do not provide contrary evidence that preponderates to justify second-guessing the EPA's

scientists or to reject out of hand the EPA's technical decisions. Defendants have quarreled with the overall projected pump and treat remedy that could generate additional response costs of 20 million dollars. This remedy is not cast in stone. The site remains subject to technical review and ultimately to judicial review which will permit legal determination of the ultimate feasibility and non-arbitrariness of the final ultimate pump and treat remedy.

440. Some dispute exists about the availability of technical information presented by the defendants on the difficulty of remediating dense non-aqueous phase liquids, which was not in the administrative record. The DNAPL issue, which was recognized and addressed superficially by EPA, does not disable the proposed remedy, nor make it arbitrary, capricious or unlawful action at this stage of remediation.

441. The United States has incurred response costs of $7,809,683.46 as of June 30, 1997, not including interest or attorneys fees, for remedial actions in connection with the Arvin facility. These costs are fully documented by EPA's computerized cost recording system and the SCORES summary. The Railroad "cost expert" did not assist the Court because his opinion was based on accounting principles not applicable in CERCLA cost recovery. His testimony quibbled with the EPA's cost packages, documentation, and criticized the technical cost-recovery methology EPA utilizes. Those battles were fought and lost much earlier in CERCLA's history. This approach lacked credibility and provides no basis to disallow EPA's claimed response costs.

441A. The Railroads, Shell, and DTSC have stipulated that DTSC has incurred documented response costs of $401,872.81 through March 31, 1998,

not including interest and attorneys fees and costs, for response actions in connection with the Arvin facility.

442. The state and federal governments are entitled to recover all of their costs submitted and proved, which are fully documented and consistent with the NCP.

H. *Future Costs and Attorneys' Fees*

443. A prevailing government party may recover attorneys' fees in a CERCLA recovery action. *United States v. Chapman,* 146 F.3d 1166, 1175-76 (9th Cir.1998) (CERCLA § 107(a)(4) permits the government to recover all reasonable attorney fees attributable to the litigation as a part of its response costs if it is the prevailing party); *see also Washington State Dept. of Transp. v. Washington Natural Gas Co.,* 59 F.3d 793, 800 (9th Cir.1995). Costs incurred by EPA after June 30, 1997, or by DTSC after March 31, 1998, except plaintiffs' attorneys' fees and costs and interest through trial, which shall be awarded as part of the recoverable costs associated with the entry of judgment, shall be treated as future costs. A declaratory judgment will be entered establishing the liability for future costs not inconsistent with the National Contingency Plan. Continuing jurisdiction is reserved over the case to address future issues about the necessity of the proposed ultimate remedy for the Site.

VIII. APPORTIONMENT

444. By apportioning CERCLA harm, a defendant limits its liability but still remains liable for some portion of the harm. *See State of Washington v. United States,* 922 F.Supp. 421, 429-30 (D.Wash.1996) (defendants may limit liability based on harm each caused); *United States v. Fidelcor,* 1993 WL 276933

(E.D.Pa. Jul.21, 1993) (divisibility is a limitation of liability).

445. Congress intended that "traditional and evolving common law principles, guided by the Restatement (Second) of Torts [§ 433A]," are the basis for determination of the scope of liability under Section 107 of CERCLA. *See Matter of Bell Petroleum Servs., Inc.*, 3 F.3d 889, 895 (5th Cir.1993); *Monsanto Co.*, 858 F.2d at 171 n. 23; *Redwing Carriers, Inc. v. Saraland Apartments*, 94 F.3d 1489, 1512-13 (11th Cir.1996); *United States v. Alcan Aluminum Corp.*, 964 F.2d 252, 268 n. 26 (2d Cir.1993); *O'Neil v. Picillo*, 883 F.2d at 178; *State of Washington v. United States*, 922 F.Supp. at 425; *Akzo Coatings*, 881 F.Supp. at 1210; *Allied Corp. v. Acme Solvents Reclaiming, Inc.*, 691 F.Supp. 1100, 1116 (N.D.Ill.1988).

446. Although CERCLA section 107(a) does not expressly require the imposition of joint and several liability," [i]mposing joint and several liability carries out the legislative intent by insuring that responsible parties will fulfill their obligations to clean up the hazardous waste facility." *United States v. J.B. Stringfellow*, 661 F.Supp. 1053, 1060 (C.D.Cal.1987); *see also Bell*, 3 F.3d at 895 ("Although joint and several liability is commonly imposed in CERCLA cases, it is not mandatory in all cases.").

A. *Apportionment Generally*

447. A responsible defendant may avoid joint and several liability if the entire harm is (1) divisible and (2) capable of apportionment; each defendant bears the burden of proof on apportionment. *See United States v. Monsanto Co.*, 858 F.2d 160, 172 (4th Cir.1988), *cert. denied*, 490 U.S. 1106, 109 S.Ct. 3156, 104 L.Ed.2d 1019 (1989); *United States v. R.W. Meyer, Inc.*, 889 F.2d 1497, 1507 (6th Cir.1989), *cert. denied*, 494 U.S. 1057,

110 S.Ct. 1527, 108 L.Ed.2d 767 (1990); *O'Neil v. Picillo*, 883 F.2d 176, 178-79 (1st Cir.1989); *United States v. Chem-Dyne Corp.*, 572 F.Supp. 802, 810 (S.D.Ohio 1983)." It is critical that these two different contexts are not confused." *Stringfellow*, 661 F.Supp. at 1060; *see Redwing*, 94 F.3d at 1513.

448. In the first context, a court must determine whether "the harm resulting from two or more causes is indivisible, or whether the harm is capable of division or apportionment among separate causes. If there is a single harm that is theoretically or practically indivisible, each defendant is jointly and severally liable for the entire injury." *Id.* However, if there are distinct harms that are capable of division, then liability should be apportioned according to the contribution of each defendant. *See* Restatement (Second) of Torts §§ 433A, 875, 881 (1976). "The question whether the harm to the plaintiff is capable of apportionment among two or more causes is a question of law, and is for the decision of the Court in all cases." Restatement (Second) of Torts § 434 Comment d (1976).

449. The second aspect of "apportionment" arises after the first inquiry regarding the indivisibility of the harm. *See Stringfellow*, 661 F.Supp. at 1060. "If the defendants are found to be jointly and severally liable, any defendant may see k to limit the amount of damages it would ultimately have to pay by see king an order of contribution apportioning the damages among the defendants." *Id.* In this second apportionment context, "the guidelines of the Gore amendment should be used in determining whether damages should be apportioned." *Id.* (quoting *United States v. Stringfellow*, 20 ERC 1905, 1910 (1984)). The Court retains discretion in its application of equitable factors in apportioning damages in order to mitigate the

hardships of imposing joint and several liability upon defendants who have only contributed a small amount to a potentially large indivisible harm. *See id.*

450. From the discretionary nature of the apportionment analysis, apportionment should not be a substitute for the exclusive third party defense. Section 107(a) of CERCLA expressly states that CERCLA liability is "subject only to the defenses set forth in subsection (b)." 42 U.S.C. § 9607(a). To completely avoid liability a defendant must meet the requirements of the third party defense. *See Levin Metals Corp. v. Parr-Richmond Terminal,* 799 F.2d 1312, 1316 (9th Cir.1986).

451. The divisibility of harm doctrine is consistent with the intent of Congress that "'traditional and evolving common law principles should define the scope of liability under CERCLA." *Redwing Carriers, Inc. v. Saraland Apartments,* 94 F.3d 1489, 1513 (11th Cir.1996) (quoting *Bell,* 3 F.3d at 895); *see O'Neil,* 883 F.2d at 178-79; *Monsanto,* 858 F.2d at 171 n. 23; *United States v. Chem-Dyne Corp.,* 572 F.Supp. 802, 805-08 (S.D.Ohio 1983). The starting point for divisibility of harm analyses in CERCLA cases is the Restatement (Second) of Torts, which provides for the apportionment of damages among two or more parties when at least one is able to show either (1) "distinct harms" or (2) a "reasonable basis for determining the contribution of each cause to a single harm." Restatement (Second) of Torts § 433A (1965); *see Township of Brighton,* 153 F.3d at 318; *Bell,* 3 F.3d at 895; *Chem-Dyne,* 572 F.Supp. at 810; *Monsanto Co.,* 858 F.2d at 172. The usefulness of the Restatement depends upon the extent it is compatible with the provisions of CERCLA. *See O'Neil,* 883 F.2d at 179 n. 4 (describing the Restatement as "one source for us

to consult"); *United States v. Hercules, Inc.*, 247 F.3d 706, 716 (8th Cir.2001).

452. The Governments concede that the Restatement approach must be tailored to fit the unique liability provisions of CERCLA. The Restatement provides that where "two or more causes combine to produce such a single result, incapable of division on any logical or reasonable basis, and each is a substantial factor in bringing about the harm, the courts have refused to make an arbitrary apportionment for its own sake, and each of the causes is charged with responsibility for the entire harm." Restatement (Second) Torts, § 433A, comment on subsection (2). While the Restatement approach indicates that a plaintiff must prove that each defendant was a "substantial factor" in causing a single harm, courts have not imposed this requirement in CERCLA cost recovery cases due to inconsistency with CERCLA's relaxed causation requirement. *See, e.g., O'Neil v. Picillo*, 883 F.2d at 179 ("While courts have generally looked to the Restatement for guidance, they have declined to place the burden of showing that defendants are 'substantial contributors' on the government, recognizing Congress' concern that cleanup efforts not be held hostage to the time-consuming and almost impossible task of tracing all the waste found at a dump site."); *see also Matter of Bell Petroleum*, 3 F.3d 889, 901 (5th Cir.1993); *accord Alcan Aluminum Corp.*, 964 F.2d at 270.

453. Once liability has been established, the burden shifts to the defendant to demonstrate, by a preponderance of the evidence, that there exists a reasonable basis for divisibility. *See Township of Brighton*, 153 F.3d at 318; *O'Neil*, 883 F.2d at 182. "Divisibility generally limits the scope of, but does not entirely eliminate, CERCLA liability since the doctrine

is essentially a defense only to joint and several liability." *United States v. Hercules, Inc.*, 247 F.3d 706, 717 (8th Cir.2001); *see also Control Data*, 53 F.3d at 934 n. 4; *Bell*, 3 F.3d at 895.

454. Proving divisibility is a "very difficult proposition," Control Data, 53 F.3d at 934 n. 4, and the Restatement recognizes that some harms," by their nature, are normally incapable of any logical, reasonable, or practical division." Restatement (Second) of Torts § 433A cmt. to subsection (2) (1965), quoted in *Bell*, 3 F.3d at 896. When this is the case, the Restatement cautions against making an "arbitrary apportionment for its own sake." *Id.; see also United States v. Colorado & Eastern R.R. Co.*, 50 F.3d 1530, 1535 (10th Cir.1995) (noting that "the courts have been reluctant to apportion costs" and that "responsible parties rarely escape joint and several liability"); *O'Neil*, 883 F.2d at 183 (defendants hoping to escape joint and several liability must satisfy the "stringent burden placed on them by Congress"); *Alcan Aluminum Corp.*, 964 F.2d at 269 (substantial burden).

455. Apportionment in this case is exacerbated by defendants' "scorched earth," all-or-nothing approach to liability. Neither acknowledged an iota of responsibility, in the case of Shell, for causing "releases of hazardous substances, and in the case of the Railroads, that any release of hazardous substance that required response occurred on Railroad parcel throughout the 13 year lease terms. Neither party offered helpful arguments to apportion liability. On the other hand, the Governments contend that contribution to the harm is indivisible and because the overwhelmingly responsible party, the Site 81% owner and sole operator, B & B is bankrupt, that both defendants are 100% jointly and severally liable. All parties thereby effectively abdicated providing any

helpful arguments to the court and have left the court to independently perform the equitable apportionment analysis demanded by the circumstances of the case.

456. "When a defendant is successful in demonstrating a reasonable basis for apportionment, approaches to divisibility will vary tremendously depending on the facts and circumstances of each case." *Hercules*, 247 F.3d at 717. Evidence of divisibility focuses on determining the amount of harm caused by the defendant. *See Bell*, 3 F.3d at 903. The evidence supporting divisibility must be concrete and specific. *See United States v. Alcan Aluminum Corp.*, 892 F.Supp. 648, 657 (M.D.Pa.1995) *(Alcan III)*, *aff'd*, 96 F.3d 1434 (3d Cir.1996) (table).

457. Various factors determine whether a reasonable basis for divisibility exists. *See Township of Brighton*, 153 F.3d at 319. For instance," distinct harms" are properly be regarded as separate injuries. *See* Restatement (Second) of Torts § 433A (1965); *Bell*, 3 F.3d at 895; *Hercules*, 247 F.3d at 717. Distinct harms may also be based on geographical considerations, such as where a site consists of "non-contiguous" areas of soil contamination, *Akzo Coatings, Inc. v. Aigner Corp.*, 881 F.Supp. 1202, 1210 (N.D.Ind.1994), *clarified on reconsideration*, 909 F.Supp. 1154 (N.D.Ind.1995), or separate and distinct subterranean "plumes" of groundwater contamination, *United States v. Broderick Investment Co.*, 862 F.Supp. 272, 277 (D.Colo.1994).

458. Most applicable here is that a "single harm" may be divisible because it is possible to discern the degree to which different parties contributed to the damage. *Id.* The experts' testimony show an indivisible slowly migrating plume of subterranean contaminants that result from releases of agricultural chemicals at the Site, predominately from the B & B

parcel and with an incalculable contribution from the Railroad parcel, for 29 years through B & B operations and a 13 year period for the Railroads. The rail spur was owned and operated by B & B.

459. A division is proper where "it is clear that each [defendant] has caused a separate amount of harm, limited in time, and that neither has any responsibility for the harm caused by the other," such as where "two defendants, independently operating the same plant, pollute a stream over successive periods of time." *Bell*, 3 F.3d at 895. Single harms may also be "treated as divisible in terms of degree," based on the relative quantities of waste discharged. *Id.* at 895-96; *Hercules*, 247 F.3d at 718. This sort of divisibility may be provable even where wastes have become cross-contaminated and commingled, for "co-mingling is not synonymous with indivisible harm." *Alcan II*, 990 F.2d at 722; *see also Bell*, 3 F.3d at 903.

460. In *Bell*, for instance, the Fifth Circuit held that a single plume of contamination could be apportioned where (1) the plume was contaminated with the same hazardous substance by (2) the successive chrome plating operations of three operators, and (3) where business records existed, though incomplete, to allow an approximation of the contributions of each operator. 3 F.3d at 904.

461. Where causation is unclear, courts should not hasten to "split the difference" in an attempt to achieve equity. *See Township of Brighton*, 153 F.3d at 319. "If they are in doubt, district courts should not settle on a compromise amount that they think best approximates the relative responsibility of the parties." *Id.* "In such circumstances, courts lacking a reasonable basis for dividing causation should avoid apportionment altogether by imposing joint and several liability."

Hercules, 247 F.3d at 718-19; *Township of Brighton*, 153 F.3d at 319.

462. This is a classic "divisible in terms of degree" case, both as to the time period in which defendants' conduct occurred, and ownership existed, and as to the estimated maximum contribution of each party's activities that released hazardous substances that caused Site contamination.

B. *Equitable Apportionment*

463. While § 113(f)(1) directs courts to allocate cleanup costs between responsible parties "using such equitable factors as the court determines are appropriate," it does not limit courts to any particular list of factors. The statute's expansive language instead affords a district court broad discretion to balance the equities in the interests of justice. *See Environmental Transp. Sys., Inc. v. ENSCO, Inc.*, 969 F.2d 503, 509 (7th Cir.1992) ("[T]he language of [CERCLA § 113(f)] clearly indicates Congress' intent to allow courts to determine what factors should be considered in their own discretion without requiring a court to consider any particular list of factors."); *United States v. R.W. Meyer, Inc.*, 932 F.2d 568, 571 (6th Cir.1991) ("The trial judge was well within the broad discretion afforded by the statute in making the apportionment he did.").

"At the allocation phase, the only question is the extent to which a defendant's liability may be offset by the liability of another; the inquiry at this stage is an equitable one and courts generally take into account the so-called 'Gore factors.'" *Hercules*, 247 F.3d at 718; *see* 42 U.S.C. § 9613(f) (providing that a court "may allocate response costs among liable parties using such equitable factors as the court determines are

appropriate"); *Township of Brighton*, 153 F.3d at 318; *Control Data*, 53 F.3d at 935.

The "Gore factors" include:

> 1. the ability of the parties to demonstrate that their contribution to a discharge[,] release or disposal of a hazardous waste can be distinguished;
>
> 2. the amount of the hazardous waste involved;
>
> 3. the degree of toxicity of the hazardous waste involved;
>
> 4. the degree of involvement by the parties in the generation, transportation, treatment, storage, or disposal of the hazardous waste;
>
> 5. the degree of care exercised by the parties with respect to the hazardous waste concerned, taking into account the characteristics of such hazardous waste; and
>
> 6. the degree of cooperation by the parties with Federal, State, or local officials to prevent any harm to the public health or the environment.

A & F Materials Co., 578 F.Supp. at 1256; *Township of Brighton*, 153 F.3d at 318-19.

C. *Apportionment to Insolvent B & B*

464. B & B is *insolvent* and has not defended in this case. Its default has been entered.

465. A court may decline to apportion an indivisible harm as a matter of discretion in exceptional cases," in which injustice to the plaintiff may *result*." Restatement (Second) Torts, § 433A, comment on subsection (1). An example provided is where "one of two tortfeasors is so hopelessly insolvent that the plaintiff will never be able to collect from him the share of the damages allocated to him." *Id.* Plaintiffs contend the two defendants should be held jointly and severally liable for all of B & B's orphan share.

466. Congress was well aware of the need for discretion in apportioning harm in CERCLA cases, where large orphan shares often exist. *See United States v. Kramer*, 953 F.Supp. 592, 598 (D.N.J.1997). For example, H.R. 7020, the 1980 House version of CERCLA, which was not enacted into law, originally contained a *mandatory* apportionment provision allowing defendants to apportion harm among themselves, but requiring the court to do so "to the maximum extent practicable" if the defendants could not. 126 Cong. Record D1356, H9459 ("To the extent apportionment is not established under subparagraph (A), the *court shall apportion* the liability, to the maximum extent practicable ...") (emphasis added). Congressman Gore introduced an amendment to eliminate mandatory apportionment. The Gore Amendment provided that if the defendants could not apportion harm between themselves, then the "court *may apportion* the liability among the parties where deemed appropriate." 126 Cong. Record H9366, H9366 (emphasis added). Congressman Gore explained that the Amendment was designed to avoid the case where "a major contributor could seek to establish the culpability of other defendants-although he would not quantify the harm contributed by each-to enlarge the pool of liable parties and thereby reduce each defendant's cost obligation." 126 Cong. Record D1356, H9464. Congressman Gore stated that the mandatory apportionment scheme "would also enable a defendant to disregard totally any effort to locate other defendants ... and would effectively limit a single defendant's liability even in face of skimpy proof." *Id.* Congressman Gore noted the "amendment would also make this bill more in tune with the common law by making the apportionment under section 2(B) discretionary on the part of the court." *Id.*

467. In support of the Gore Amendment, Vermont *Congressman*, Jeffords, emphasized the need for courts to retain the discretion available under common law to avoid the result of apportioning a large share of the harm at a site to a bankrupt party:

> Mr. Chairman, as a cosponsor of the Hazardous Waste Containment Act I wish to commend the fine work of Mr. Gore, Mr. Florio, Mr. Madigan, and other Members involved in the formulation of a compromise solution to the liability questions in H.R. 7020.
>
> * * *
>
> I also wish to record my support for the second amendment being offered by Congressman Gore which would affirm the discretion of courts to apportion liability among solvent parties who are held jointly and severally liable for a release of hazardous waste. While the intent of the unamended bill may have been in conformity with the prevailing common law, the language of H.R. 7020 is in need of revision. The prevailing common law does not require courts to apportion liability among defendants who are held jointly and severally liable where the proportion of harm attributable to a particular defendant has not been established. The imposition of mandatory apportionment could result in attempts by the parties liable for a release of hazardous waste to allocate a large portion of the liability to insolvent defendants. As the discussion on this floor will indicate, the total costs being recovered under this act are intended to be recovered from among the solvent liable parties. The adoption of the second amendment offered by Mr. Gore would eliminate mandatory apportionment of liability and clarify the

intent of this House that any apportionment of liability is to be among solvent parties.

126 Cong. Record D1356, H9467.

468. The House ultimately enacted the Gore Amendment on September 30, 1980 as part of the "Hazardous Waste Containment Act of 1980." The Hazardous Waste Containment Act of 1980, like the Senate Superfund Bill, S. 1431, contained an express statement that CERCLA liability is joint and several. *State of New York v. Shore Realty Corp.*, 759 F.2d 1032, 1042 n. 13 (2d Cir.1985). The compromise that ultimately became CERCLA deleted any reference altogether to joint and several liability to give federal courts' flexibility if a particular case did not warrant the imposition of joint and several liability. *Id.* In 1986, Congress again rejected an attempt to impose a mandatory apportionment scheme on federal courts, (*see* 131 Cong. Record S11,586) and instead enacted statutory provisions to speed settlements and ameliorate the potentially harsh effects of joint and several liability. *See, e.g.*, 42 U.S.C. §§ 9622(e)(2) & (g). Congress also enacted a statutory claim for contribution among potentially responsible parties. 42 U.S.C. § 9613(f).

469. In *Matter of Bell Petroleum Servs., Inc.*, 3 F.3d 889 (5th Cir.1993), recognizes that the Restatement approach of declining to apportion harm in exceptional circumstances of insolvency of one of the defendants should not necessarily apply in CERCLA cases brought by the United States, because the "deck is already stacked in favor of the government." *Id.* at 901 n. 13. This dicta in *Bell Petroleum*, is incorrect for several reasons. First, the notion that apportionment should be applied "to even" the playing field in CERCLA litigation ignores that fact that Congress expressly enacted CERCLA to provide the federal

government with effective tools to cleanup hazardous waste sites and to easily recover costs of response to replenish the Superfund. *See Anspec v. Johnson Controls, Inc.*, 922 F.2d 1240, 1247 (6th Cir.1991); H.R. Rep. No 1016, 96th Cong. 2d Sess, pt. 1, at 33, *reprinted in* 1980 U.S. Code Cong. & Admin. News 6119, 6136 ("The purpose ... is to provide mechanism for prompt recovery of monies expended for the costs of such action ... and to induce such potentially liable persons to pursue appropriate environmental response actions voluntarily."). The broad liability provisions of CERCLA ensure that those associated with a hazardous waste facility, as opposed to the taxpayers, will shoulder the financial burden of cleaning up hazardous waste sites. *Anspec*, 922 F.2d at 1247. In addition, one of the reasons Congress enacted CERCLA was the perception that common law liability schemes were inadequate. *See National Ass'n of Mfrs. v. United States Dept. of the Interior*, 134 F.3d 1095, 1105, 1112 (D.C.Cir.1998); *State of Ohio v. Dep't of the Interior*, 880 F.2d 432, 455 & n. 38 (D.C.Cir.1989). Nothing could be more inconsistent with Congressional intent than to interpret CERCLA to be narrower than common law as expressed in the Restatement.

470. The idea that a defendant has the automatic right to apportion harm to the prejudice of a governmental plaintiff also runs counter to Congress's clearly expressed intent in the 1986 SARA amendments relating to settlement. The settlement provisions Congress added in 1986 were intended to encourage prompt settlement of Superfund liability to expedite cleanup and reduce litigation costs. *See B.F. Goodrich*, 99 F.3d at 521; *In Re Cuyahoga Equip. Corp.*, 980 F.2d 110, 119 (2d Cir.1992); *Aetna Cas. and Sur. Co., Inc. v. Pintlar Corp.*, 948 F.2d 1507, 1517 (9th Cir.1991); *United States v. Akzo Coatings of America*,

Inc., 949 F.2d 1409, 1450 (6th Cir.1991); *Fairchild Semiconductor Corp. v. EPA*, 984 F.2d 283, 287 (9th Cir.1989); *In re Charter Co.*, 862 F.2d 1500, 1503 (11th Cir.1989).

471. The effect of giving a defendant an automatic right to an apportioned share (*i.e.*, the mandatory apportionment twice rejected by Congress) could hinder CERCLA settlements. Here, the predominantly responsible party, B & B, is insolvent. Although authority exists to reallocate B & B's orphan share to the other responsible persons according to Section 113(f)(1) of CERCLA, 42 U.S.C. § 9613(f)(1), to do so would manifestly inequitable. *See The Pinal Creek Group v. Newmont Mining Corp.*, 118 F.3d 1298, 1302 (9th Cir.1997) ("Under § 113(f)(1), the cost of orphan shares is distributed equitably among all PRPs"), *cert. denied*, 524 U.S. 937, 118 S.Ct. 2340, 141 L.Ed.2d 711 (1998); *cf. Ekotek Site PRP Comm. v. Self*, 1 F.Supp.2d 1282, 1293 (D.Utah 1998) ("In a section 113 action, responsibility for "orphan shares"-that is," those shares of the waste responsibility which are attributable to PRPs who either are insolvent or cannot be located or identified"-should be *equitably* apportioned among all PRPs.") (emphasis added). The concept that a passive owner of a contiguous parcel, not representing more than 19% in area of a CERCLA site, operated less than 44% of the time, where substantially smaller volumes of hazardous substance releases occurred, should be strictly liable for the entire site remediation, because no other responsible party is judgment-worthy, takes strict liability beyond any rational limit.

D. *Railroads' Divisible Harm*

472. In the present case, the harm is a single harm which consists of contaminated soil at various locations and depths around the Site and one mass (plume) of

contaminated groundwater. Although scientific disagreement was presented to question causation, a large contaminated plume of groundwater, emanating from agricultural chemical releases over twenty-eight years at the Site, underlies the facility. Soil beneath the Site is contaminated and capable of releasing chemicals of concern. Some part of the contaminant releases emanated from the Railroad Site caused by storage, spilling, leaks and washing activities that released agricultural chemicals from application rigs and smaller tanks and containers parked and stored on the Railroad parcel. The existing plume presents a cognizable, although not specifically quantifiable, threat of leaching and diffusing to lower levels of potential drinkable groundwater that are not yet seriously contaminated, and beyond that, to a municipal water well of the City of Arvin, which is some 1200 feet southwest from the Site. Even the remaining soil contamination presents a single harm because any contaminants in the soil are capable of leaching into the common plume underlying the two parcels. *Bell Petroleum* held that a single plume of contamination could be apportioned where: (1) the plume was contaminated with the same hazardous substance, by (2) the successive chrome plating operations of three operators, and (3) where business records existed, although incomplete, to allow an approximation of the contributions of each operator. 3 F.3d at 904.

473. Absent other evidence, an owner is deemed to have caused the contamination that exists on its parcel or that is otherwise associated with the owned parcel, by virtue of the operator's activities. *See Northernaire Plating Co.*, 670 F.Supp. at 748 (harm is presence of hazardous substances and owner is deemed to have caused harm for purposes of apportionment), *aff'd, R.W. Meyer, Inc.*, 889 F.2d at 1507-08 (adopting

reasoning of district court); *see also Weyerhaeuser Co. v. Koppers Co.*, 771 F.Supp. 1420, 1425-26 (D.Md.1991). The "act" which renders an owner, such as the Railroads," responsible" for the contamination is not actual involvement in the disposal of hazardous waste, but simply their ownership of the property where a facility operated at the time of the disposal. *See* 42 U.S.C. § 9607(a)(2); *see also Nurad, Inc. v. William E. Hooper & Sons Co.*, 966 F.2d 837, 846 (4th Cir.), *cert. denied*, 506 U.S. 940, 113 S.Ct. 377, 121 L.Ed.2d 288 (1992).

474. The evidence shows that the Railroad parcel is approximately 19.1% of the surface area of the total site. *See* FOF at ¶ 3 (Railroad parcel approximately 0.9 acres; B & B's Arvin plant-including leased Railroad parcel-is 4.7 acres). The contributions from spills and releases from the Railroad parcel are significantly less than from the B & B parcel, because the Railroad parcel was only used for vehicle and equipment storage, washing and limited loading-unloading of agricultural chemicals, not active operations or maintenance.

475. The total length of the B & B-Railroad lease, 13 years, is 45% of the B & B total of 29 years of operations at the Site from 1960 to 1989.

476. Relatively fewer activities that could result in releases were conducted on the Railroad parcel. Daily operations that resulted in releases of hazardous substances occurred on the B & B parcel. Past releases at the Railroad parcel could not have contributed more than ten (10%) of the overall site contamination given the fact that the predominant activities conducted on the Railroad parcel through the years were storage and some washing and rinsing of tanks, other receptacles, and chemical application vehicles. Mixing, formulating, loading, and unloading of ag-chemical

hazardous substances, which contributed most of the liability causing releases, were predominantly carried out by B & B on the B & B parcel.

477. Although no party has specifically documented the relative contributions of contamination from either parcel, it is indisputable that the overwhelming majority of hazardous substances were released from the B & B parcel. The sump and pond on the B & B parcel are the primary contributors to Site contamination. As demonstrated by the Railroads, the relative mass or volume of chemicals released on the B & B parcel and the Railroad parcel, respectively, is an appropriate factor to take into account in determining the Railroads' apportionable share of the divisible harm. *See Bell*, 3 F.3d at 903-904.

478. Releases of agricultural chemicals to the ground on the Railroad parcel during the lease terms more likely than not contributed to the contamination. Such releases justifiably caused the Railroad parcel to be included in the Site and to be studied, analyzed, and remediated.

Release Activities

479. The evidence is uncontradicted that the Site was graded so that surface run-off drained to the waste pond on the southeast corner of the B & B parcel. The Governments' evidence does not establish by a preponderance that the chemical releases contaminated the groundwater under the Railroad parcel through focused infiltration. But is it plausible some surface spills of chemicals on the Railroad parcel reached the waste pond by down-gradient surface water flow. A small spill of 1,2-DCP could cause substantial groundwater contamination, even if traces of 1,2-DCP would disappear in the subsurface.

480. Detecting contamination around fixed point sources is easier than detecting the traces of numerous spills that occurred at random, fluctuating locations. The burden to show an appropriate basis for apportionment is heavy. Here, the Railroad parcel was 19% of the total Site. The 13 year time period over which releases occurred on the Railroad parcel and the relatively limited extent of hazardous release-producing activities on the Railroad parcel only partly contributed to the site contamination and need for response.

481. B & B stored containers of Weed Killer D (dinoseb) in 55-gallon drums and 5 gallon cans on a concrete apron along the warehouse wall on Railroad parcel. Merryman at 31-32. B & B stored the Weed Killer D outside because if the drums and cans leaked, it was "real messy." *Id.* at 31-32, 101. Moreover, B & B did not store Weed Killer D in the warehouse because it was a low cost product "that nobody .... would steal."

482. Before occasional company barbecues, B & B employees emptied the warehouse, where cans of Nemagon, Fumazone and Round-Up were stored, and swept the concrete floor and hosed it out, washing the water with ag-chemicals present on the floor out of all three doors of the warehouse, including the doors that were on the west side of the warehouse, contiguous to the Railroad parcel. *Id.* The rinsate was washed onto the ground, including onto the Railroad parcel.

483. B & B retrieved used cans of pesticide products from growers' fields and stored the used, unrinsed cans for as long as a year, before crushing them and sending them to a landfill. Brown at 829; Merryman at 113. B & B stored used 55 gallon drums of dinoseb on the Railroad parcel. *Id.* at 31. Dinoseb has a distinctive dark yellow-orange color when it makes contact with the ground. Merryman at 74. Mr.

Merryman, a B & B employee from 1972 to 1981, testified that there were always "small leaks." *Id.* at 75. Every two or three months the cans would be collected and crushed. Crushing the cans near the UN-32 tank caused residual liquid to spill on the ground. Merryman at 62-65. The wet areas were two to three inches deep and as much as six feet across *Id.* at 100.

484. Shell Nemagon, which contained DBCP, was kept in 30-gallon drums and 5-gallon drums. *Id.* at 28. After the 30-gallon Nemagon drums were emptied, they were stored on the Railroad parcel. *Id.* at 28-29. Residual contents of used Nemagon containers leaked onto the ground. *Id.* at 97-99. After the 5-gallon cans were emptied, the cans would be brought back in the yard and stored at the can storage area, marked "D" on Exhibit G-100. *Id.* at 29-30. The 5 gallon empty cans were transferred to the Railroad parcel, where the empty 30-gallon Nemagon drums were stored, because the small can storage area became flooded when it rained. *Id.* at 30.

485. D-D rigs were parked on Railroad parcel. *Id.* at 15-16, 81, 113-14; Brown at 1003. Filters were checked 20 times a month, at least. Merryman at 113. The D-D rigs were not usually washed out unless they became full of sediment. *Id.* at 14, 16, 110. D-D rigs had a plastic or "corlon" sight gauge tube on the end of the tank. *Id.* at 14-15; Brown at 822. Exposure to sunlight made these tubes brittle. Brown at 822. Sight gauges regularly broke. A hard wind would cause breakage of brittle gauges. When this occurred the contents of a half-filled tank would slowly spill on the ground through the sight gauge. Merryman at 104; Brown at 823. B & B was not always "quick enough to replace" sight gauges and "would lose material." Brown at 822.

486. If the D-D nurse tanks were going to be idle, they would be washed out and parked on the Railroad parcel. Sometimes too many nurse tanks were lined up for washing, so the D-D nurse tanks were parked west of the warehouse on the Railroad parcel.

487. The B & B parcel was graded towards the southeast pond. *Id.* at ¶ 50. After 1960, the sump was connected to the pond. *Id.* at ¶ 51.

488. The amount of contaminants that entered the sump, including D-D's constituent parts, cannot be exactly quantified. *Id.* at ¶¶ 89-92. However, the Railroads' several liability may be roughly calculated. The Railroad parcel is 0.9 acres. *Id.* at 3. The entire site is 4.7 acres. The Railroad parcel is 19% of the Site. The Railroads leased their parcel to B & B for 13 years, 45% of B & B's operations of the Site. The volume of hazardous substance releasing activities on the B & B property is at least ten times greater than any Railroad parcel releases. Nemagon and dinoseb were stored on the Railroad parcel and D-D rigs and idle D-D nurse tankers were parked on the Railroad parcel. Nemagon and dinoseb caused contamination of the site. Estimates are that these two chemicals contributed to 2/3 of overall Site contamination. While there is some D-D contamination as a result of D-D rig and nurse tank storage on the Railroad parcel, the slight contamination is offset by the fact that the Site is graded towards the southeast pond and the levels of chemical contamination on the B & B parcel are substantially higher than the reported detections on the Railroad parcel.

489. B & B first began operations at the Site in 1960, but did not lease the Railroad parcel until 1975. *Id.* at ¶¶ 1 & 4. B & B ceased its operations by 1989. The time period of operations when contamination was released from the Railroad parcel is less than half the

time releases occurred from the B & B parcel. Substantially greater daily operations of loading, unloading, washing, rinsing, and storage were conducted on the B & B parcel. Taking this into account, if 19% is multiplied by 0.45 (13 years of storage on Railroad parcel use/28 years of B & B operations) and multiplied by 2/3 (dinoseb and Nemagon contamination) the relative figure of 6% is reached. There is no evidence to quantify the difference in volume of the releases; however, based on the considerable evidence of the relative levels of activity and number of releases on the two parcels, the Railroad parcel could not have contributed to more than 10% of the volume or mass of the overall site contamination resulting from B & B's hazardous substance-release producing activities as the sole site operator and owner of over 80% of the site. Allowing for calculation errors up to 50%, the Railroads under no theory of release of contaminants can be liable for more than 9% of the total Site CERCLA response costs including interest and attorneys' fees. The Railroads agree they are liable for $489,727.00, the costs the United States incurred in connection with its investigation of releases on Railroad parcel. In addition, the Railroads agree that they are liable for the future cost of paving the Railroad parcel with asphalt, as required by the EPA in the Record of Decision.

E. *Shell's Divisible Harm*

490. Shell did not present evidence how its products' contribution to the contamination at the Arvin facility can be apportioned. Spills were inherent in the common carrier deliveries that Shell arranged for and occurred in the course of every delivery. *See* FOF at ¶¶ 131-142. Spills were an expected incident of D-D sales, as evidenced by a spillage allowance in

Shell's contract with B & B. Despite the use of buckets to catch spills, releases of a few cupfuls to five gallons of D-D frequently spilled to the ground in the unloading operation. *See id.* at ¶ 134. Spills of D-D from hoses and couplings during the D-D delivery process on the B & B parcel were common occurrences. *See id.* at ¶ 147.

490A. Dinoseb is a product manufactured by Dow, not Shell. In 1983 there was a spill of dinoseb in the drum storage area that resulted in a "hot spot" of contamination. The EPA conducted a removal operation to clean up this hot spot, and spent $1.3 million in that project. That removal action was intended to remediate only the dinoseb that contaminated the drum storage area, not the entire site, and it did not involve any Shell product. Shell did not manufacture dinoseb or ship it to the Arvin facility, and had no responsibility for the spill of the chemical. The court finds that the dinoseb hot spot clean up action is a separate harm and is divisible from other clean up efforts at the site and capable of apportionment. Therefore, Shell is not liable for any part of the $1.3 million cost of that clean up action.

491. To roughly calculate the D-D spills resulting from the D-D deliveries, B & B's D-D purchases from 1972, 1973, 1979, 1980, 1982 and 1983 are averaged to determine average D-D purchases during the twenty-three year period that Shell sold agricultural chemicals to B & B at the Site. Although B & B continued to purchase D-D in 1984, 1984 is not included in the calculations because the amount of D-D estimated to be purchased that year, 26,000 gallons, is so significantly less than in the other years as to be statistically aberrational. Mr. Brown testified the common carriers that delivered Shell's D-D were 4,000 gallon tanker trucks. *Brown*, 988. However, according to Mr.

Haverland, these common carriers were 5,000 gallon trucks. Haverland at 2212. To simplify calculations, the common carrier is assumed to have 4,500 gallon capacity. It is further assumed that, on average, three gallons spilled during every delivery. The average delivery load per year is reached by dividing total annual D-D purchase, 122,390 gallons, by 4,500 gallons: 27 loads of D-D. To calculate the amount of spills caused by deliveries of Shell's D-D to the Site over a twenty three year period: 3 gallons x 27 deliveries x 23 years = 1,863 gallons of D-D. The deliveries resulted in spills of 81 gallons per year. As a result of the D-D spilled during delivery, the actual amount delivered was 122,309 gallons per year (122,390 gallons-81 gallons = 122,309 gallons).

492. The transfer of D-D from bulk storage tanks, located on B & B parcel, to bobtails resulted in leaks and spills on a daily basis. *Id.* at 137. Bobtails were trucks with 1,800 to 2,000 gallon tanks that were used to transport D-D over the roads to the nurse tanks. *Id.* at ¶ 36. During the busy D-D season, tanks were not washed except at night. *Id.* at ¶ 91-92. Assuming that 60% of the total D-D amount purchased was transferred to bobtails and 40% of the total D-D was transferred to D-D rigs, the bobtails carried a total D-D amount of 73,385 gallons. A D-D bobtail load is calculated by dividing 73,385 gallons by 1,900 gallons (the average amount a bobtail truck carried): 39 bobtail loads per year. The spills are not quantified. To calculate spills, it is assumed that a spill ranged from a cup to a quart. To determine the D-D spills that resulted from the transfer of D-D from the bulk storage tanks to the bobtails: 39 bobtail loads x 3 cups x 23 years = 2,691 cups => 168 gallons of D-D. Transfer of D-D from bulk storage tanks to bobtails resulted in a release of 7 gallons of D-D per year. The actual D-D

amount that was transferred to the nurse tanks was 73,385 gallons (73,385 gallons-7 gallons = 73,378 gallons).

493. Spills occurred when the D-D bobtails were washed out because about five to ten gallons of D-D remained and could not be pumped out. *Id.* at ¶¶ 89-90. To calculate the spills from the bobtail washing, it is assumed that the bobtails were washed out 70% of the time. To determine the D-D spills from the bobtail washing: 39 bobtail loads x 70% x 7.5 gallons x 23 years = 4,709 gallons of D-D. Rinsing the bobtails released spills of approximately 205 gallons per year.

494. D-D spills of a pint or quart also occurred when the D-D nurse tank filters were checked prior to use. *Id.* at 133-34. Nurse tanks were four-wheeled mobile tanks that were generally of two sizes: 2,000 and 2,600 gallons. *Id.* at 31. To simplify the calculations, the average of the two sizes, 2,300 gallons, is used. The number of nurse tank loads is calculated by dividing 73,378 gallons (the D-D amount in the nurse tanks) by 2,300 gallons: 32 annual nurse tank loads. The D-D spilled over 23 years as a result of the nurse tank filter checks: 32 loads x 3 cups x 23 years = 2,208 cups => 138 gallons. The spills resulting from the D-D tank filter checks amounted to 6 gallons per year.

495. Spills also occurred when B & B employees rinsed out nurse tanks at the wash rack. *Id.* at ¶ 32. The nurse tanks were not washed if they were sent back to the fields the next day with D-D. *Id.* To determine spills that occurred as a result of the washing, it is assumed that the nurse tanks were not washed out 70% of the time and that similar to the bobtail trucks, 5-10 gallons remained in the nurse tank and could not be pumped out prior to the wash. The amount of D-D spilled as a result of nurse tank washing: 32 nurse tank loads x 70% x 7.5 gallons x 23

years = 3,864 gallons of D-D. Rinsing the nurse tanks released approximately 168 gallons of D-D per year.

496. Spills of a quart or less occurred as a result of checking filters on D-D rigs. *See id.* at ¶ 23.D-D rigs were 500 gallon or 600 gallon tanks mounted on two-wheeler trailers. *Id.* at 121. Filters were checked 20 times a month for four months. *Id.* at ¶ 24.D-D spills also occurred when the sight gauges on the D-D rigs broke and B & B failed to quickly replace them. *Id.* at ¶ 29. D-D spills from broken sight gauges cannot be determined; however, D-D spills from filter checks can be estimated. It is assumed that 48,924 gallons of D-D, 40% of the D-D amount B & B purchased, were transferred to D-D rigs. The number of D-D rig loads is calculated by dividing 48,924 gallons by 550 gallons (the average D-D amount held by the D-D rig): 89 D-D rig loads per year. The amount of D-D spills caused by the D-D filter checks: 89 D-D rig loads x 2 cup (D-D spill) x 80 checks (checks per year) x 23 years = 327,520 cups => 20,470 gallons of D-D. The spills resulting from the D-D filter checks amounted to approximately 890 gallons per year.

497. The evidence does not preponderate that after delivery to storage tanks that Shell had operational control over B & B's handling of D-D and other Shell chemicals at the Site to justify holding Shell liable for ongoing spills and leakage, except in the delivery-unloading-transfer process.

498. The percentage of D-D spills resulting from Shell deliveries is calculated by dividing 1,863 gallons (the D-D spilled through Shell controlled deliveries) by 31,212 gallons (the total amount of D-D spills) to equal approximately 6%.

499. Shell is severally liable for 6% of the total site recovery costs including interest and attorney' fees. A

dollar adjustment will be made to deduct from these amounts, 6% of the $1.3 million attributable to dinoseb cleanup at the Arvin site.

F. *Equitable Apportionment among the Railroads and Shell*

500. Equitable apportionment of the Governments' costs must be imposed on the Railroads and Shell Oil Company in amounts equal to their pro rata to hazardous releases or by virtue of the Railroads' ownership of part of the Site.

1. *Railroads' Apportioned Share*

501. The Railroads knew that B & B distributed chemicals and used the leased Railroad parcel as part of its total agricultural-chemical operations. On the Railroad parcel, B & B parked fertilizer rigs and stored such hazardous chemicals as Weed Killer D (dinoseb) and used pesticide cans. The Railroads inspected the Arvin Site and knew that leaks and spills of these chemicals were a common and expected part of B & B's operations. From the time of the executed lease in 1975, to the cessation of B & B's operations in 1989, the amount of leaked hazardous waste on the Railroad parcel cannot be specifically quantified. Nor can the causative effects of contaminant releases over the Railroads' portion of the Site be determined with certainty.

502. Despite their knowledge of potential harm to the environment, the Railroads took minimal steps to attempt to avoid or contain B & B's spills and leaks of hazardous chemicals on the Railroads' parcel. In 1984, the Railroads required B & B to execute a supplemental agreement containing an environmental indemnity for the Site, which shows the Railroads' knowledge of and intent to avoid responsibility for environmental hazards at an agricultural chemical

storage and formulating site. The agreement required B & B to periodically furnish the Railroads with satisfactory proof that B & B had complied with all applicable environmental laws. There is no evidence the Railroads ever did so. The Railroads further required B & B to indemnify the Railroads for any environmental harms for non-compliance with applicable environmental storage and disposal laws.

503. The supplemental agreement appears to be an attempt by the Railroads to avoid potential liability by "looking the other way" as to environmental harms caused by B & B. "[P]ersons cannot escape liability by 'contracting away' their responsibility or alleging that the incident was caused by the act or omission of a third party." *New York v. General Elec. Co.*, 592 F.Supp. at 297. The Railroads are a sophisticated landowner with full knowledge of environmental risks produced by the operations of B & B, an agricultural chemical dealer, direct seller, and applicator. The Railroads provided no satisfactory proof that their tenant, B & B, was in compliance with all applicable environmental laws in B & B's use of the leased premises. To the contrary, the testimony at trial shows that B & B was chronically sloppy and openly and continuously in violation of several environmental handling and disposal laws. The Railroads have no evidence showing they took any steps which would entitle them to further credit in the apportionment process.

504. While the Railroads did not supply the chemicals brought onto the Arvin facility, the Railroads stood by and allowed the contamination to occur and to continue. By everyone's account, B & B was a sloppy operator. As the lessor-land owner, the Railroads had a responsibility to ensure that all activities affecting their leased parcel complied with all

applicable environmental laws. The 1984 agreement, that delegated to B & B all responsibility for environmental compliance, does not relieve the Railroads from their responsibility as the landowner. From a CERCLA standpoint, the private contract for indemnity is irrelevant.

505. In the same way the Railroads stood by when the EPA listed the Railroad parcel as part of the Arvin NPL facility, the Railroads stood by as B & B continued to contaminate the Site through the lease terms. The Railroads are severally liable for 9% of the total Site response costs, which amount to $702,871.51 in EPA costs as of June 30, 1997, and $36,168.55 in DTSC costs as of March 31, 1998, not including interest and attorneys' fees. $489,727.00, the cost the United States incurred in connection with its investigation of releases on Railroad parcel is necessarily included in the total amount. The Railroads concede they are liable for the future cost of paving the Railroad parcel with asphalt, as required by the EPA in its Record of Decision, this is covered by the declaration of liability for future costs.

2. *Shell's Apportioned Share*

506. For over twenty years, Shell "arranged for" the sale for profit of D-D with actual knowledge that D-D would spill and be released into the soil during the delivery and unloading process. With each delivery to the Arvin site, a few cup-fulls to five gallons of D-D spilled to the ground and were released to the environment. Shell knew that spills and leaks were inherent in the unloading process. Corroboration of this fact is that some of Shell's contracts with B & B provide a spillage allowance. Like the Railroads, Shell also attempted to transfer to B & B by contract, Shell's potential environmental liability for these inevitable spills and leaks. The characterization of the spill

allowance as a "pricing" strategy to meet completion is not persuasive. As part of its "Conditions of Sale" of D-D, Shell required B & B to unload the D-D and to indemnify Shell for any harms resulting from the D-D's transfer and storage to the bulk storage tank.

Unlike the Railroads, however, Shell attempted to minimize the spills and leaks inherent in the delivery process. In 1978, Shell distributed a manual to all its distributors making several recommendations of how spills and leaks were best handled. Shell also instituted a "Bulk Storage Facilities" Program for all of its distributors requiring environmental compliance with all applicable environmental laws. Inspections and recommendations, particular to each site, were a regular part of the program. Shell's mitigating efforts although commendable are insufficient to avoid liability. Shell is liable for 6% of the total response costs, minus $1.3 million that was spent by EPA cleaning the dinoseb hot spot, which amount to $390,581.01 in EPA costs as of June 30, 1997, and $24,112.37 in DTSC costs as of March 31, 1998, not including interest and attorneys' fees.

G. *Shell's Apportioned Share of the Railroads' Response Costs.*

507. The Railroads spent $3,057,700 in response costs in connection with their remedial work at Arvin. The Railroads demonstrated that $2,607,318 of those costs were incurred in response to EPA Administrative Order 91-6, and were necessary, reasonable, and consistent with the NCP. The Railroads are entitled to 6% of their response costs, or $156,439.08, plus interest, from Shell.

IX. CONCLUSION

For the foregoing reasons, judgment shall be entered for the United States in the amount of

$702,871.51 plus interest against the Atchison Topeka & Santa Fe Railway and the Southern Pacific Transportation Company, and in the amount of $390,581.01 plus interest against Shell Oil Company which represents those Defendants' respective several shares of the total CERCLA response costs incurred by EPA as of June 30, 1997.

For the same reasons, judgment shall be entered for the Department of Toxic Substances Control in the amount of $36,168.55 plus interest against the Atchison Topeka & Santa Fe Railway and Southern Pacific Transportation Company, and in the amount of $24,112.37 plus interest against Shell Oil Company which represents those Defendants' respective several shares of the total CERCLA response costs incurred by DTSC as of March 31, 1998.

Judgment also shall be entered for the Atchison Topeka & Santa Fe Railway Company and Southern Pacific Transportation Company in the amount of $154,439.08 plus interest against Shell Oil Company, which represents Shell's apportioned share of the Railroads' costs incurred in response to EPA Administrative Order 91-6.

Declaratory judgments shall be entered in favor of EPA and DTSC, respectively, and against the Railroads and Shell Oil for future response costs at the Site in the respective percentages of 9% and 6% of the amounts incurred, according to proof, if necessary. The court retains jurisdiction over future remedies and remediation costs at the B & B Arvin facility. EPA and DTSC, respectively, shall recover a pro rata share of attorneys' fees in accordance with law and costs of suit. Judgment shall be entered by a separate document pursuant to Rule 58 of the Federal Rules of Civil Procedure and Local Rule 54-293 of the Eastern District of California.

The federal government attorneys shall propose a form of judgment consistent with these findings of fact and conclusions of law and lodge the proposed judgment with the court within five (5) days following the date of service of these findings.

SO ORDERED.

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

UNITED STATES of America, Plaintiff,

and

Department of Toxic Substances Control, State of California, Plaintiff-Appellant,

v.

BURLINGTON NORTHERN & SANTA FE RAILWAY COMPANY, as successor in interest to the Atchison, Topeka & Santa Fe Railway Company; Union Pacific Transportation Company, as successor in interest to the Southern Pacific Transportation Company; Shell Oil Company, Defendants-Appellees.

United States of America, Plaintiff-Appellant,

and

Department of Toxic Substances Control, State of California, Plaintiff,

v.

Burlington Northern & Santa Fe Railway Company, as successor in interest to the Atchison, Topeka & Santa Fe Railway Company; Union Pacific Transportation Company, as successor in interest to the Southern Pacific Transportation Company; Shell Oil Company, Defendants-Appellees.

United States of America; Department of Toxic Substances Control, State of California, Plaintiffs-Appellees,

v.

Burlington Northern & Santa Fe Railway Company, as successor in interest to the Atchison, Topeka & Santa Fe Railway Company; Union Pacific Amending Transportation Company, as successor in interest to the Southern Pacific Transportation Company, Defendants,

and

Shell Oil Company, Defendant-Appellant.

Nos. 03-17125, 03-17153, 03-17169.

Argued and Submitted Sept. 12, 2005.
Submission Withdrawn Sept. 14, 2005.
Resubmitted and Filed March 16, 2007.
Amended Sept. 4, 2007.

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502 F.3d 781

Before: B. FLETCHER, JOHN R. GIBSON,* and MARSHA S. BERZON, Circuit Judges.

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* The Honorable John R. Gibson, Senior United States Circuit Judge for the Eighth Circuit, sitting by designation.

ORDER

The opinion filed March 16, 2007, slip op. 3209, and published at 479 F.3d 1113 (9th Cir.2007) is hereby amended as follows:

1. Replace <the State of California> with <the defendant oil companies> in the second sentence of footnote 30 on page 3250 of the slip opinion, 479 F.3d at 1139.
2. In the last paragraph of the opinion, on page 3256 of the slip opinion, 479 F.3d. at 1142, replace <The Railroads ... the harm at the Arvin site.> with <The Railroads ... the harm at the Arvin site, except with regard to the so-called "Dinoseb hot spot."[32]>
3. Add the following text as footnote 32: <The district court found that the "Dinoseb hot spot" was a discrete area contaminated by Dinoseb (a Dow product) as the result of a major spill in 1983, that Shell did not manufacture or ship that product, and that Shell thus bore no responsibility for any part of the $1.3 million cost of cleaning up this discrete spill. The governments did not challenge this finding on appeal. That finding therefore stands, and the district court should not include the $1.3 million dollar cleanup costs for the "Dinoseb hot spot" in the calculation of Shell's liability.>

The petition for rehearing and petition for rehearing en banc remain pending.

OPINION

BERZON, Circuit Judge:

A now-defunct company, Brown & Bryant, Inc. (B & B), owned and operated a facility at which toxic chemicals were stored and distributed. Part of the land on which the chemical operation was located was

owned by two railroad companies (the Railroads), and some of the chemicals used by B & B were supplied and delivered to the facility by Shell Oil Company (Shell). Because toxic chemicals remaining at the facility threatened groundwater and may continue to do so in the future, the United States Environmental Protection Agency (EPA) and the State of California's Department of Toxic Substances Control (DTSC) spent a considerable amount of money to clean up the site and may need to spend more in the future. The two agencies sought to recover these response costs under the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601, 9675[1] (CERCLA), but the district court held the Railroads and Shell liable for only a minor portion of the total cleanup costs. B & B was defunct by that time, and so could not contribute to the cleanup costs. The agencies were thus left holding the bag for a great deal of money.

Seeking to hold the Railroads and Shell jointly and severally liable for the entire judgment, the agencies appeal. Shell cross-appeals, claiming that it was not an "arranger" under CERCLA, § 9607(a)(3), and therefore is not a party on whom any cleanup liability can be imposed. We reverse the portion of the judgment that declined to impose full joint and several liability on the Railroads and Shell and affirm the portion of the judgment that imposed liability on Shell as an arranger.[2]

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[1] Unless otherwise noted, all statutory citations are to Title 42 and the 2000 edition of the U.S. Code.

[2] The Railroads have requested judicial notice of the EPA proceedings concerning their suit for reimbursement from the government and of the stay of those proceedings pending the determination of joint and several liability in this case. These

I. Background

Beginning in 1960, B & B operated an agricultural chemical storage and distribution facility in Arvin, California on a 3.8-acre parcel of land (the B & B parcel). In 1975, B & B's agricultural chemical distribution business outgrew that parcel, and B & B began leasing a 0.9-acre parcel of land adjacent to its own parcel. The 0.9-acre parcel (the Railroad parcel) was jointly owned by the Railroads—Atchison, Topeka & Santa Fe Railroad Co., the predecessor in interest to Burlington Northern & Santa Fe Railway Co., and Southern Pacific Transportation Co., the predecessor in interest to Union Pacific Transportation Co. B & B used the Railroad parcel principally to park fertilizer rigs.

The Railroad parcel comprised the western portion of the Arvin site.[3] Directly to the east of the Railroad parcel sat B & B's warehouse. The Railroad parcel, like the rest of the Arvin site, was graded toward a drainage pond on the B & B parcel.

B & B used the Railroad parcel as an integral part of its overall agricultural chemical facility. From its facility B & B sold local growers agricultural chemical products produced by various manufacturers. In particular, B & B purchased, received delivery of, stored on the Arvin site, and distributed two Shell-produced agricultural chemicals: the soil fumigants D-D and Nemagon. D-D and Nemagon—members of a class of chemicals called nematocides—are designed to

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proceedings do not "'have a direct relation to matters at issue.'" *United States ex rel. Robinson Rancheria Citizens Council v. Borneo, Inc.*, 971 F.2d 244, 248 (9th Cir.1992) (citation omitted). We therefore deny the Railroads' request for judicial notice.

[3] We refer to the B & B and Railroad parcels together as the "Arvin site."

kill nematodes, microscopic worms that attack the roots of crops. Nematocides work by penetrating the soil and then dispersing. B & B also stored on the Arvin site dinitro (dinoseb) weed killer, purchased from Dow Chemical Company.

During the 1960s and 1970s, Shell strongly encouraged its customers, including B & B, to purchase D-D in bulk, a policy requiring customers to maintain large storage tanks. Shell delivered the bulk D-D to B & B "FOB Destination" via common carrier trucks.[4] When the trucks carrying D-D arrived at the Arvin facility, the contents of the trucks were transferred to B & B's large tanks by hoses. The process was quite messy, with frequent spills.

To apply D-D to growers' fields, B & B used rigs loaded with the chemical. The rigs were stored on the Railroad parcel, as were bulk containers of dinoseb and, occasionally, empty fertilizer cans. Chemicals also reached the Railroad parcel through water flow from the B & B parcel.

In 1978, after a windstorm destroyed the bulk D-D storage tank used to store Shell D-D, B & B began using converted stainless steel milk trailers to store the bulk D-D. The chemical, which is highly corrosive and eats through steel, can cause leakage in steel tanks only a few years old. B & B kept these leak-prone tanks all over the Arvin facility, including on the Railroad parcel.

D-D, when it leaks, evaporates quickly if exposed to air but is highly soluble in water. When D-D infiltrates the ground, it moves through the soil by molecular

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[4] "FOB Destination" means "free on board" and "when the term is F.O.B. the place of destination, the seller must at his own expense and risk transport the goods to that place and there tender delivery of them." U.C.C. § 2-319(1)(b) (2003).

diffusion, dispersing in all directions. A slight pull from gravity, however, makes the chemical a bit more likely to flow downward into groundwater than laterally through the soil. Dinoseb, similarly, tends to move to the groundwater table if there is water movement in that direction. No toxic chemicals can reach the groundwater level currently used as a source of drinking water because of an impermeable layer of soil. The next highest level, however, is a potential source of drinking water, and contamination can reach that level.

After more than twenty years of leakage and dissemination of hazardous materials, the DTSC in 1983 found B & B in violation of several hazardous waste laws. The EPA investigated separately and found evidence of substantial soil and groundwater contamination at B & B's Arvin facility. The EPA and DTSC (the Governments) began to remedy the contamination pursuant to their cleanup authority under CERCLA, incurring substantial remediation costs. In 1991, the EPA ordered the Railroads to take specific preventative steps on the Railroad parcel, including installing groundwater monitoring wells. None of the contamination requiring immediate remediation was on the Railroad parcel.

In 1992, the Railroads filed an action against B & B and certain of its principals for contribution for costs incurred in the EPA-ordered cleanup. Four years later, the Governments each filed CERCLA actions against B & B, the Railroads, and Shell for reimbursement of their investigation and cleanup costs.[5] The district court consolidated the three cases and, after a twenty-seven day bench trial, issued an

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[5] The relevant statutory sections covering contribution and reimbursement actions, § 9613(f) and § 9607, are quoted later in this opinion.

exceedingly detailed 185-page Findings of Fact and Conclusions of Law, thereafter slightly amended.[6]

The district court found the Railroads liable as owners of the Arvin facility and as persons who "at the time of disposal of any hazardous substance owned or operated any facility at which such hazardous substances were disposed of." § 9607(a)(1), (2). Shell was held liable as a "person who ... arranged for disposal ... of hazardous substances." § 9607(a)(3). Turning to whether the Railroads and Shell were liable for all or only a portion of the cleanup costs, the district court found that the harm to the Arvin site was capable of apportionment and proceeded to apportion it. The Railroads and Shell had, by acknowledging no liability at all, taken what the district court termed a "'scorched earth,' all-or-nothing approach to liability," and so provided little assistance on the apportionment issue. The district court nonetheless proceeded to "perform the equitable apportionment analysis demanded by the circumstances of the case."

For the Railroads, the court multiplied three proportions: (1) the percentage of the overall site that was owned by the Railroads, 19.1%;[7] (2) the percentage of time that the Railroads leased the parcel in relation to B & B's total operations, 45%;[8] and (3) the fraction of hazardous products attributable to the Railroad parcel,

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[6] Quotations from and discussion of the district court's ruling in this opinion concern the district court's Amended Findings of Fact and Conclusions of Law unless otherwise noted.

[7] *0.9* acres # 45# *4.7* acres = *0.191* (19.1%).

[8] B & B began operations in 1960. The Railroad parcel was leased starting in 1975. In 1988, B & B ceased its operations at Arvin. Thus, the Railroad parcel was part of the Arvin site for 13 of 29 years, or 45% of the time B & B operated the facility.

66%.[9] This calculation resulted in a determination of 6% liability. Then, to account for any "calculation errors," the district court assumed 50% error and raised the Railroads' proportion of the total liability to 9%.

For Shell, the district court approximated the percentages of leakage from various activities attributable to Shell and multiplied them together to set Shell's proportion of the total liability at 6%.[10] Shell was also assigned, in the contribution action, 6% of the costs incurred by the Railroads in their cleanup effort.[11]

DTSC and the EPA timely appealed the district court's judgment. Shell timely cross-appealed the finding that it was liable as an "arranger" under CERCLA.

II. Standards of Liability Under Cercla

CERCLA was enacted in 1980 to provide for effective responses to health and environmental threats posed by hazardous waste sites. *See generally Mardan Corp. v. C.G.C. Music, Ltd.*, 804 F.2d 1454, 1455 (9th Cir.1986). Under CERCLA, state and

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[9] There were three pertinent chemicals: D-D, Nemagon, and dinoseb. The district court found that although there was some D-D contamination attributable to the Railroad parcel, that "slight contamination is offset by the fact that the [Arvin] Site is graded towards the southeast pond [on the B & B parcel] and the levels of chemical contamination on the B & B parcel are substantially higher than the reported detections on the Railroad parcel." On that reasoning, the district court removed all D-D from the equation.

[10] B & B, albeit insolvent, was assigned 100% joint and several liability.

[11] The Railroads do not challenge the percentage of liability assigned to Shell.

federal governments can first begin the cleanup of toxic areas, *see* § 9604(a)-(d), and then sue potentially responsible parties (PRPs) for reimbursement, *see* § 9607(a). A key purpose of this scheme is "shift[ing] the cost of cleaning up environmental harm from the taxpayers to the parties who benefited from the disposal of the wastes that caused the harm." *EPA v. Sequa Corp.* (*In the Matter of Bell Petroleum Servs., Inc.*), 3 F.3d 889, 897 (5th Cir.1993) (citing *United States v. Chem-Dyne Corp.*, 572 F.Supp. 802, 805-06 (S.D.Ohio 1983)).

In accord with this purpose, CERCLA is a "super-strict" liability statute. Under its provisions, parties can be liable for cleaning up toxic chemicals if they fit into one or more of the four PRP categories set out in § 9607(a):

> (1) the owner and operator of ... a facility,
>
> (2) any person who at the time of disposal of any hazardous substance owned or operated any facility at which such hazardous substances were disposed of,
>
> (3) any person who by contract, agreement, or otherwise arranged for disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous substances owned or possessed by such person ..., and
>
> (4) any person who accepts or accepted any hazardous substances for transport to disposal or treatment facilities....

A "facility" is defined in § 9601(9)(B) as "any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located; but does not include any consumer product in

consumer use or any vessel."[12] The statute's basic liability provision, in turn, provides that "subject only to the defenses set forth in subsection (b) of this section [PRPs shall be liable for]—(A) all costs of removal or remedial action incurred by the United States Government or a State or an Indian tribe not inconsistent with the national contingency plan ...." § 9607(a). Thus, PRPs can be responsible for the costs of cleaning up hazardous waste sites without any finding that they were negligent *or* that they caused the contamination, unless they can make out the third-party defense set out in § 9607(b)(3).[13]

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[12] The district court found that the entire Arvin site, including the Railroad parcel, was a single facility for the purposes of § 9607. The Railroads do not appeal that finding.

[13] Section 9607(b) reads:

> There shall be no liability under subsection (a) of this section for a person otherwise liable who can establish by a preponderance of the evidence that the release or threat of release of a hazardous substance and the damages resulting therefrom *were caused solely by*—
>
> ...
>
> (3) an act or omission of a third party other than an employee or agent of the defendant, or than one whose act or omission occurs in connection with a contractual relationship, existing directly or indirectly, with the defendant (except where the sole contractual arrangement arises from a published tariff and acceptance for carriage by a common carrier by rail), if the defendant establishes by a preponderance of the evidence that (a) he exercised due care with respect to the hazardous substance concerned, taking into consideration the characteristics of such hazardous substance, in light of all relevant facts and circumstances, and (b) he took precautions against foreseeable acts or omissions

A. Validity of Apportionment

CERCLA does not address the question whether, as between PRPs who are liable for cleanup costs, liability is *joint and several*—meaning that each PRP responsible for all cleanup costs at a facility is liable for such costs—or *severable*—meaning that cleanup costs at a single facility can be apportioned among PRPs on some basis.

In this circuit, liability is joint and several when the harm is indivisible. *Fireman's Fund Ins. Co. v. City of Lodi*, 302 F.3d 928, 945 (9th Cir.2002); *see also Carson Harbor Vill., Ltd. v. Unocal Corp.*, 270 F.3d 863, 871 (9th Cir.2001) (en banc). Thus, a defendant "may be held fully liable for the entire clean-up costs at a site despite the fact that the defendant PRP was in fact responsible for only a fraction of the contamination." *Fireman's Fund*, 302 F.3d at 945.

We have also referred in general terms to the possibility of apportioning liability. *See id.* (noting the use of "federal common law principles" of apportionment); *Carson Harbor Vill.*, 270 F.3d at 871 (stating that once liability has been found, "the defendant may avoid joint and several liability by establishing that it caused only a divisible portion of the harm"). Yet, in none of our cases has there been an actual dispute regarding whether liability should be apportioned among the liable PRPs.[14] This case

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of any such third party and the consequences that could foreseeably result from such acts or omissions.

(Emphasis added). Section 9607(b) also provides defenses for "an act of God" and "an act of war." § 9607(b)(1), (2).

[14] The major cases addressing division of PRP liability under CERCLA in the Ninth Circuit instead have been contribution cases among PRPs, decided after joint liability was established, *see, e.g., Carson Harbor Vill.*, 270 F.3d at 871; *Pinal Creek Group*

squarely presents that question. To determine whether the district court was correct to apportion liability in this case, we thus must address, initially, the general propriety of severability.[15] In line with every circuit that has addressed the issue, we hold that apportionment is available at the liability stage.

In so ruling we rely, as have the other circuits that have analyzed the issue, on a seminal case decided in 1983 in the Southern District of Ohio, *Chem-Dyne.*

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v. Newmont Mining Corp., 118 F.3d 1298, 1301 (9th Cir.1997), or have addressed a different issue entirely, *see, e.g., Fireman's Fund*, 302 F.3d at 945 (analyzing the possibility that CERCLA preempts state laws).

[15] DTSC argues that the apportionment question is not properly before us because it was not properly raised in the pretrial order, but we do not agree. To preserve a claim, a party must put forward a position in the pretrial statement in a manner sufficient to put the opposing party on notice and allow the trial court to consider its merits. *See Cripe v. City of San Jose*, 261 F.3d 877, 886 n. 9 (9th Cir.2001) (refusing to hold that defendants had waived an affirmative defense by mislabeling it, because the court and plaintiffs were on notice of the real issue); *Arizona v. Components Inc.*, 66 F.3d 213, 217 (9th Cir.1995) (noting that argument must be raised sufficiently for the court to rule on it). Notice to the district court is not an issue in this case, as the final decision addresses apportionment. While the Governments claim to have been unaware that they needed to address the apportionment issue, their assertion is not supported by the record. Both the Railroads and Shell directly addressed the apportionment issue in their pretrial orders. The Railroads "den[ied] that they are jointly and severally liable for the response costs claimed by the Government" but argued that, if liable, they should only be responsible for that fraction of the total mass of groundwater contamination proven to be traceable to their parcel. Shell noted that joint and several liability is not mandatory and cited cases regarding apportionment. As a result, we conclude that the issue of apportioning liability was not waived and is properly before us.

After reviewing the evolution of the statute, *Chem-Dyne* concluded that liability under § 9607(a) may be joint and several even though the statute does not expressly so provide. *Chem-Dyne*, 572 F.Supp. at 810. Suggesting that Congress intended to leave the matter to the usual common law rules, adjusted to CERCLA as necessary, *Chem-Dyne* held that courts should look to the Restatement (Second) of Torts, as well as to other indications of federal common law, for the principles of joint and several liability applicable under CERCLA. *See id.* at 809-10. Later, circuit court cases endorsed this approach. *See Chem-Nuclear Sys., Inc. v. Bush*, 292 F.3d 254, 259-60 (D.C.Cir.2002); *United States v. Hercules, Inc.*, 247 F.3d 706, 717 (8th Cir.2001); *United States v. Township of Brighton*, 153 F.3d 307, 318 (6th Cir.1998); *Bell Petroleum*, 3 F.3d at 895-96; *United States v. Alcan Aluminum Corp.* (*Alcan-PAS*), 990 F.2d 711, 721-22 (2d Cir.1993); *United States v. Alcan Aluminum Corp.* (*Alcan-Butler*), 964 F.2d 252, 268-69 (3d Cir.1992); *United States v. Monsanto Co.*, 858 F.2d 160, 171-72 (4th Cir.1988).

As *Chem-Dyne* persuasively recounts, the history of § 107(a) of CERCLA, 42 U.S.C. § 9607(a), indicates that although Congress declined to mandate joint and several liability, it did not intend by doing so "a rejection of joint and severable liability." *Chem-Dyne*, 572 F.Supp. at 808. Instead, recognizing the difficulties inherent "'in prescribing in statutory terms liability standards which will be applicable in individual cases,'" *id.* at 806 (quoting 126 CONG. REC. S14964 (Nov. 24, 1980) (remarks of Sen. Randolph)), Congress meant "to have the scope of liability determined under common law principles, where a court performing a case by case evaluation of the complex factual scenarios associated ... will assess the propriety of applying joint and

several liability on an individual basis," *id.* at 808. We agree with this account of Congress's intent and hold that apportionment can be appropriate under CERCLA.

B. Standards for Apportionment

Because we hold that apportionment is available at the liability stage in CERCLA cases, we must determine the appropriate standards for determining when apportionment is available and, when it is, how to ascertain the proper division of damages among defendants. Again, we draw on the experience of our sister circuits.

The circuits that have addressed these questions have looked to common law principles of tort in general, and the Restatement in particular, for guidance as to when and how to impose joint and several liability under § 9607(a). We agree that this approach is proper and adopt it here. We also follow *Chem-Dyne* and all of the courts of appeals that have addressed the question in holding that the resulting standard must be a uniform federal rule. *See, e.g., Aviall Servs., Inc. v. Cooper Indus., Inc.*, 312 F.3d 677, 684 (5th Cir.2002) (holding that apportionment of CERCLA liability "is ... a matter of federal common law"), *reversed on other grounds by* 543 U.S. 157, 125 S.Ct. 577, 160 L.Ed.2d 548 (2004); *United States v. Burlington N. R. Co.*, 200 F.3d 679, 697 (10th Cir.1999) (same); *Township of Brighton*, 153 F.3d at 329 (same); *Monsanto Co.*, 858 F.2d at 172 (same). As *Chem-Dyne* noted, the legislative history of CERCLA supports such an approach, as does its policy favoring national uniformity so as to discourage "illegal dumping in

states with lax liability laws." *Chem-Dyne*, 572 F.Supp. at 809.[16]

The question, then, is what the uniform federal law should be. Once again, all the circuits that have addressed this question have followed *Chem-Dyne*, holding that the appropriate source for a common law rule of apportionment is Section 433A of the Restatement of Torts. *See Hercules*, 247 F.3d at 716 & n. 9, 717 (noting that courts support the divisibility doctrine as borrowed from the Restatement); *Bell Petroleum*, 3 F.3d at 895 (relying on the Restatement); *Chem-Dyne*, 572 F.Supp. at 810 (establishing this method). We concur in this conclusion generally, although we borrow from the Restatement with two important caveats, as there are two areas where the Restatement approach is a somewhat poor fit and requires slight modifications to ensure that our

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[16] The parties here have assumed that the apportionment standard must be one of uniform federal common law. As stated above, every federal circuit to address the issue, including those decided after *O'Melveny & Myers v. FDIC*, 512 U.S. 79, 114 S.Ct. 2048, 129 L.Ed.2d 67 (1994), and *Atherton v. FDIC*, 519 U.S. 213, 117 S.Ct. 666, 136 L.Ed.2d 656 (1997), has shared that understanding. Although *Atchison, Topeka & Santa Fe Ry. Co. v. Brown & Bryant, Inc.*, 159 F.3d 358, 362-64 (9th Cir.1997), questioned whether *O'Melveny & Myers* and *Atherton* upset Ninth Circuit law with regard to the adoption of uniform federal common law regarding successor liability under CERCLA, very different considerations govern with respect to apportionment. In *Atchison*, resolution of the question of successor liability would resolve *who* was liable under CERCLA, an inquiry with roots in state corporate law. Here, the inquiry diverges from state law completely. As we explain in this section, the "super-strict" nature of CERCLA liability is *sui generis*, so there is no state law directly applicable. The resulting apportionment analysis therefore requires a similarly unique set of considerations, married to the statute's functions and purpose.

approach comports with the liability and remediation scheme of CERCLA. *First*, there are important distinctions between causation as conceived in the Restatement and causation in the context of CERCLA. We describe these and import a nexus concept that relates to the particular PRP provisions at issue. And *second*, the concept of "harm" in the Restatement as actual injury does not correspond easily to CERCLA's priorities. We conclude instead that contamination and the cost of remediation are both relevant for the "harm" analysis under CERCLA. The Restatement's fundamental reliance on objective rather than equitable considerations, however, does comport well with the "super-strict" nature of CERCLA and with the development of the statute, leaving us to conclude that equitable considerations have no role at this stage in the applicable standards.

1. Causation

Section 433A of the Restatement allows for apportionment of damages where "(a) there are distinct harms,[17] or (b) there is a reasonable basis for

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[17] Comment b of section 433A notes:

Distinct harms. There are other results which, by their nature, are more capable of apportionment. If two defendants independently shoot the plaintiff at the same time, and one wounds him in the arm and the other in the leg, the ultimate result may be a badly damaged plaintiff in the hospital, but it is still possible, as a logical, reasonable, and practical matter, to regard the two wounds as separate injuries, and as distinct wrongs. The mere coincidence in time does not make the two wounds a single harm, or the conduct of the two defendants one tort. There may be difficulty in the apportionment of some elements of damages, such as the pain and suffering resulting from the two wounds, or the medical expenses, but this does not mean that one defendant must be liable for the distinct harm inflicted by the other.

determining the *contribution of each cause* to a single harm."[18] RESTATEMENT (SECOND) OF TORTS § 433A(1) (1965) (emphasis added). CERCLA, however, does not require causation as a prerequisite to liability (except with regard to the third-party defense, *see* § 9607(b), not at issue here). Nonetheless, most of the leading cases on joint and several liability under CERCLA have addressed divisibility under § 433A(1)(b) and thereby incorporated a modified concept of causation.[19] *See, e.g., Bell Petroleum*, 3 F.3d at 902-03; *Monsanto*, 858 F.2d at 172; *Chem-Dyne*, 572 F.Supp. at 810.

Notably, these cases often dealt with simpler facts than those we confront. *Chem-Dyne*, for instance,

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[18] Comment d of section 433A notes:

> *Divisible harm.* There are other kinds of harm which, while not so clearly marked out as severable into distinct parts, are still capable of division upon a reasonable and rational basis, and of fair apportionment among the causes responsible. Thus where the cattle of two or more owners trespass upon the plaintiff's land and destroy his crop, the aggregate harm is a lost crop, but it may nevertheless be apportioned among the owners of the cattle, on the basis of the number owned by each, and the reasonable assumption that the respective harm done is proportionate to that number. Where such apportionment can be made without injustice to any of the parties, the court may require it to be made.

[19] The sections of the Restatement that courts have used to establish the rules of joint and several liability under CERCLA are found in the negligence division of the Restatement. As these courts recognize, CERCLA is a strict liability statute. *See, e.g., Hercules*, 247 F.3d at 716; *Township of Brighton*, 153 F.3d at 318. Because there is no comparable divisibility rule in the strict liability portion of the Second Restatement, courts have adapted the negligence rules to strict liability by declining to rely on the portion of the Restatement section that places an initial burden as to causation on the plaintiff. *Compare Hercules*, 247 F.3d at 717, *and Bell Petroleum*, 3 F.3d at 896, *with* RESTATEMENT (SECOND) OF TORTS § 433B(1).

assumed a case quite different from this one. There, the court stated that "[t]ypically ... there will be numerous hazardous substance generators or transporters who have disposed of wastes at a particular site." 572 F.Supp. at 810. It was in that context—that is, where the question was apportionment among defendants who all disposed of wastes themselves—that *Chem-Dyne* determined that courts could follow the divisibility principles of the Restatement and remain true to CERCLA. In a situation in which the several defendants are all polluters themselves, divisibility under the Restatement standard is indeed a relatively straightforward analysis, and one in which causation concepts are useful. If the court can estimate with some confidence the amount of waste that each defendant disposed of and has a basis for determining that the extent of contamination of the site is proportional to the amount of waste disposed of, then the Restatement approach to apportionment works nicely.

The situation here is different.[20] The three "responsible" parties are: the now-insolvent majority owner and operator of the site; the mostly absentee landlord of a portion of the site; and a seller of chemicals shipped to and stored at the site. Each party had an entirely different role in the contamination process, with overlapping effects, and not all "caused" contamination in any meaningful sense.

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[20] One commentator has noted that trying to apply the Restatement to CERCLA in most cases is like "pushing a round peg through a square hole. Traditional tort law principles falter in the CERCLA context because CERCLA is so unlike a typical tort law cause of action." Lynda J. Oswald, *New Directions in Joint and Several Liability Under CERCLA?*, 28 U.C. DAVIS L. REV. 299, 360 (1995).

Most notably, PRP status premised on ownership of a facility does not require *any* involvement in the disposal of hazardous substances. Thus, to speak of a PRP "causing" contamination of its land simply by owning land on which someone else disposes of hazardous wastes is to indulge in metaphor. At the same time, to allow CERCLA defendants, especially landowner PRPs, to prove through traditional causation analysis that they were *not* entirely liable would be to undermine the premise on which the statute designated them as PRPs to begin with. CERCLA requires a *connection*—for example, that the PRP be a landowner "at the time of disposal," *see* § 9607(a)(2)—but no further *causation*. We therefore adjust the application of the Restatement principles to the current circumstance by abjuring the traditional "causation" principles and substituting a nexus concept that depends upon the particular PRP provision applicable. Where, as here, the pertinent PRP status is as landowner, the landowner can establish divisibility only by demonstrating that portions of the contamination are in no respect traceable to the portion of the facility that the landowner owned at the time of the disposal. The arranger nexus is more straightforward, with a focus not on ownership of the facility but rather on the relevant, arranged disposals in light of other contamination at the facility.

2. Harm

A second difficulty that results from relying on tort principles in a scheme not based on tort law concerns the application of the term "harm," used in the Restatement, as applied to CERCLA. *See* RESTATEMENT (SECOND) OF TORTS § 433A. The CERCLA cost recovery section does not focus on "harm," but rather on "costs of removal or remedial

action" and "necessary costs of response."[21] § 9607(a). Thus, when applying the Restatement in the context of CERCLA, the question becomes: What is the "harm" that we are attempting to divide?

There are three possible kinds of "harm" in actions for remediation costs under CERCLA: the initial disposal, the resulting contamination, and the costs of remediating the contamination. Actual injury to individuals or to property, the usual "harms" in a tort suit, are *not* a pertinent consideration; the statute is concerned with averting future injury by remediating contamination, not with compensation for past injuries.

If the harm were the *disposal*, then divisibility based on volume of discharge by operators or by parcel would always make sense, because disposal occurs in specific amounts at specific places. If the harm were *contamination*, then some attempt would have to be made either to justify a direct correlation between disposal and contamination under the specific circumstances or to separate out the leakage that remained as contamination from leakage that either evaporated, was adequately diluted, or for other reasons did not remain on the property in toxic form.[22] If the harm is the *cost of remediation*, then divisibility would have to be based on the pro rata cost of cleaning up each defendant's contribution to the contamination.

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[21] The statute also mentions "damages for injury to, destruction of, or loss of natural resources" and "costs of any health assessment or health effects study." § 9607(a)(C), (D). These provisions may be informative with regard to the nature of the harm in other cases but are not here applicable.

[22] In many instances, of course—as in *Chem-Dyne*—the various polluters will dispose of the same substance in the same location, so there will be a basis for assuming that each polluter's pro rata share of the hazardous waste disposed of and of the resulting contamination is the same. *See also Bell Petroleum*, 3 F.3d at 903.

That pro rata cost will sometimes differ from the proportion of contamination caused by each defendant, because the cost of removing contamination can vary with geographical considerations, degree of toxicity, the means of extraction used for different toxic substances, or other factors.

In light of a CERCLA liability suit's central purpose—recovering the cost of eradicating contamination—we conclude that it is most useful for purposes of determining divisibility to view the "harm" under CERCLA as the contamination traceable to each defendant. Disposal itself is not the focus of the statute, unless it results in contamination. And the cost of cleaning up the contamination is most analogous to the damages recovered in a tort suit, not to the injury on which liability is based.[23]

3. Equity

Because this case is one in which the harms are not distinct, apportionment must be under Restatement § 433A(1)(b) if it is to be allowed at all. That is, there must be a reasonable basis for determining the contribution of each PRP to the harm. While nothing in the statute directly addresses the question whether equitable factors are appropriate for purposes of apportioning liability among joint tortfeasors, all the other circuits that have addressed the issue have held that they are not. We again follow their lead.

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[23] The cost of cleanup of different toxic substances or in different areas of the facility will often be a useful measure of the proportion of the *pertinent* contamination allocable to each defendant. That cost will depend upon factors such as which contamination was serious enough to merit remediation and how thoroughly the soil was contaminated in various areas. Thus, the "harm" allocation analysis may in some instances usefully focus initially on the proportion of costs associated with remedying various aspects of the contamination.

Although CERCLA is not explicit on this issue, there is a statutory provision concerning the separate question of contribution actions among PRPs once liability to the plaintiffs seeking to recover cleanup costs has been determined. That provision, § 9613(f), added to CERCLA in 1986, is silent as to initial divisibility. It only describes, quite generally, the considerations applicable in a contribution action for determining whether one PRP can collect from another a portion of the costs for which it has been held liable: "In resolving contribution claims, the court may allocate response costs among liable parties using such *equitable factors* as the court determines are appropriate." § 9613(f) (emphasis added).[24] In contrast, § 433A(1)(b) of the Restatement and the appended commentary concerning divisibility are silent as to equitable considerations.[25]

Although, as noted, this circuit heretofore has not addressed divisibility analysis, the implication from our

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[24] Among the equitable factors used in CERCLA contribution cases are the so-called "Gore factors." *See Hercules*, 247 F.3d at 718. Those factors are derived from the amendment that then-Representative Gore introduced in 1980 to alleviate the harshness of mandatory apportionment, which at that time was a part of the bill. *See* 126 CONG. REC. 26782 (1980) (statement of Rep. Gore). Although these factors are appropriate in contribution cases, they are not, for the reasons suggested in the text, appropriate considerations at the liability stage.

[25] The only mention of equity in Restatement § 433A is in comment h, regarding "[e]xceptional cases." Comment h suggests that in cases of insolvent defendants, when an "innocent plaintiff would be forced to bear the share of the loss due to the defendant from whom he could not collect damages," courts may refuse to allocate harm to avoid "injustice to the plaintiff." Because we determine that there is no reasonable basis for apportioning the defendants' harm, we do not reach the question of whether the considerations of comment h are applicable here.

cases deciding § 9613(f) contribution issues is that the proper time to focus on such factors is *at the contribution phase*, not the liability phase. *See, e.g., Carson Harbor Vill.*, 270 F.3d at 871 (noting that the "contribution provision aims to avoid a variety of scenarios by which a comparatively innocent PRP might be on the hook for the entirety of a large cleanup bill"); *Pinal Creek*, 118 F.3d at 1301 ("A PRP's contribution liability will correspond to that party's equitable share of the total liability and will not be joint and several.").

Other circuits have been careful to delineate the difference between the equitable considerations pertinent under § 9613(f) and the objective considerations pertinent under § 9607(a). *See Hercules*, 247 F.3d at 718; *Township of Brighton*, 153 F.3d at 318; *Bell Petroleum*, 3 F.3d at 901. As the Sixth Circuit has noted, divisibility analysis has the potential to eviscerate the strict liability principles of CERCLA entirely, "because defendants who can show that the harm is divisible, and that they are not responsible for any of the harm" could whittle their liability to zero. *Township of Brighton*, 153 F.3d at 318. Additionally, as *Township of Brighton* also noted in rejecting a fairness-based approach, divisibility analysis is not an invitation to "split the difference" and come up with a "compromise amount." *Id.* at 319.

While it may seem unfair to hold a partial owner liable for all the contamination cleanup costs, that perceived unfairness is the result of the statutory "super-strict" liability scheme. Assuring fairness among PRPs is the proper subject of the contribution stage, not of apportionment at the liability stage. *See United States v. Rohm & Haas Co.*, 2 F.3d 1265, 1280-81 (3d Cir.1993), *overruled on other grounds by United States v. E.I. Dupont De Nemours & Co.*, 432 F.3d 161,

162-63 (3d Cir.2005) (en banc). At the liability stage, CERCLA simply assigns liability to statutorily responsible parties so as to assure that, as between those with *some* connection to the contamination—and who have, it may be assumed, benefited from the contamination-causing process—and those with *none*, such as the taxpayers. Any court-created structure that would allow PRPs to whittle their share to little or nothing and leave the taxpayers holding the bag may seem more equitable to some PRPs but would violate the basic structure of the CERCLA statutory scheme. Because of such concerns, courts have generally refrained from using an equity-based allocation analysis, so as not to weaken further the strict liability principle basic to CERCLA.

We agree that while joint and several liability need not be universally applied, *see Bell Petroleum*, 3 F.3d at 897, the inquiry as to whether such liability is appropriate must focus strictly on whether there is a reasonable basis for apportionment, *see, e.g., id.* at 901-04. Consequently, in an action under § 9607(a), a court is not to look to equitable considerations, such as relative fault, in determining whether liability is to be joint and several or apportioned.

III. Analysis of Railroads' and Shell's CERCLA Liability

We now proceed to apply these fairly straightforward principles to the circumstances of this case. Here, the Railroads were found to be PRPs under § 9607(a)(2), as the owners of a "facility at which ... hazardous substances were disposed of," and Shell was found to be a PRP under § 9607(a)(3), as a person who "arranged for disposal ... of hazardous substances owned or possessed by such person." The first question we address is whether the Railroads and Shell

are liable for *all* the cleanup costs at the Arvin site, or, as the district court held, only some of them. The second question, addressed later, is whether Shell is liable for *any* of the harm, as an "arranger."

A. Apportionment of Liability

1. Standard of Review and Burden of Proof

Because we have not heretofore faced a CERCLA apportionment issue directly, there is no Ninth Circuit precedent concerning the standard of appellate review for such an issue. Three circuits have addressed the question, and two separate approaches have emerged.

The Fifth and Eighth Circuits look first to whether there is a reasonable basis for apportioning the harm, an inquiry they consider a question of law reviewed de novo. *See Hercules*, 247 F.3d at 718-19; *Bell Petroleum*, 3 F.3d at 896, 902. These two circuits then examine, as a question of fact reviewed under the clearly erroneous standard, precisely how damages are to be divided. *See Hercules*, 247 F.3d at 718 (holding that "actual apportionment" of damages is a question of fact); *Bell Petroleum*, 3 F.3d at 896 (same).

In contrast, the Sixth Circuit considers divisibility as a whole a factual matter of causation, reviewed entirely under the clearly erroneous standard. *Township of Brighton*, 153 F.3d at 318 n. 13. This view, however, disregards a distinction between conceptual divisibility and actual allocation that we find both persuasive and useful. The latter inquiry can involve the resolution of credibility issues and of conflicting evidence, while the former ordinarily does not.

We believe the most appropriate approach, and the one we therefore adopt here, is the one adopted in *Hercules* and *Bell Petroleum*, with a refinement suggested by Judge Parker's dissent in *Bell Petroleum*. Judge Parker thought that the majority

confused the distinction between the "*legal* burden that the single harm at issue caused is of a type capable of apportionment, and the *factual* burden of proving the amount of harm attributable to a particular party." *Bell Petroleum*, 3 F.3d at 909 (Parker, J., concurring in part and dissenting in part). We are not sure that there was any such confusion. Rather, an aspect of clear error review is the legal determination whether the party with the burden of proof met that burden; if the party did not and the district court nonetheless ruled for it, then the district court clearly erred. *See Lloyd v. Schlag*, 884 F.2d 409, 415 (9th Cir.1989) (reviewing "whether the district court committed clear error by holding that [plaintiff] had not met his burden of proof"). Thus, although the harm may be *capable* of apportionment, the harm may not actually be *apportionable* in the particular case as a factual matter, given the evidence produced, because the party advocating apportionment has not come forward with the minimum showing needed to meet its burden of proof as to the proper division of liability.

We therefore proceed as follows: We inquire, *first*, whether the particular harm at issue in the case is theoretically capable of apportionment—i.e., whether it could ever be apportioned or whether it is, by nature, too unified for apportionment. That question is one of law, reviewed de novo. *Cf. Taisho Marine & Fire Ins. Co. v. M/V Sea-Land Endurance*, 815 F.2d 1270, 1274 (9th Cir.1987). *Second*, we review for clear error whether the defendant submitted evidence sufficient to establish a reasonable basis for the apportionment of liability, taking into account that the burden of proof is on the party seeking allocation, as well as the district court's actual division of liability.

There is no dispute here on the first, purely legal question—whether the harm is capable of

apportionment. *See Bell Petroleum*, 3 F.3d at 896; *Chem-Dyne*, 572 F.Supp. at 810. Some of the contamination on the B & B site occurred before the Railroads' parcel became part of the facility, and the original B & B site is distinct from the portion leased from the Railroads. Only some of the toxic substances were stored on the Railroads' parcel, and only some of the water on the facility washed over the Railroads' site. As to Shell, only some of the toxic substances spilled on the facility were sold by the company. The different toxic substances vary in their likelihood to leak and in the manner and speed in which they disseminate in ground water. So, conceptually, the contamination traceable to the Railroads and Shell, with perfect information, would be allocable, as would be the cost of cleaning up that contamination.

The questions, then, are whether the district court clearly erred in finding that the Railroads and Shell established a "reasonable basis" for apportionment, *Bell Petroleum*, 3 F.3d at 901, and whether, having so found, the district court properly apportioned the harm.

We recognize that the district court at one point stated that the Railroads failed to "meet their burden of proof" as to divisibility. But its overall ruling was necessarily to the contrary, as the court also stated that it "independently found [in the record] a reasonable basis for apportionment in spite of the parties[']] presentations." Thus, while the district court rejected both defendants' *theories* as to divisibility, it used record evidence it found persuasive to determine apportionment. Whether the district court was correct in this regard is, as we have noted, part of the review of the factual decision regarding apportionment, discussed hereafter. The burden of proof issue thus

melds with the merits of the apportionment issue, rather than barring us from considering it.

2. The Railroads

As we have established, if apportionment is to be allowed under the Restatement approach, there must be a reasonable basis for calculating the connection between the Railroads' PRP status and the relevant harms. Again, the harm we consider is the contamination on the Arvin site. Where, as for the Railroads, the PRPs' responsibility under the statute derives solely from their status as landowner, the PRPs can establish divisibility by demonstrating that discrete portions of the contamination are in no respect traceable to land they owned at the time of the toxic disposal.

Here, the district court's severability analysis—after 191 pages of an amended opinion that included over 80 pages of factual findings—ultimately relied on the simplest of considerations: percentages of land area, time of ownership, and types of hazardous products. Although we do not fault the district court's factfinding—its numbers are mostly correct—its legal conclusion that these three factors alone suffice to support apportionment cannot stand.[26] We address each factor below to show why.

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[26] We emphasize that our conclusion does not rest simply on the fact that the district court's calculation of the Railroads' share of liability was, as the court recognized, "rough[ ]." It is neither unusual nor fatal to the validity of the resulting allocation that an apportionment determination includes estimates of contribution to contamination based on extrapolation of record facts, as long as the basis for the extrapolation is explained, is logical, and does not disregard other record facts.

a. Land Area

The only court of appeals case that has fully addressed divisibility of *landowner* liability takes a relatively strict approach to apportionment on the basis of land area. In *United States v. Rohm and Haas Co.*, 2 F.3d 1265 (3d Cir.1993), the most analogous CERCLA divisibility case to this one, the Third Circuit held, as do we, that "simply showing that one owns only a portion of the facility in question is [not] sufficient to warrant apportionment." *Id.* at 1280.

Like this case, *Rohm and Haas* concerned a landowner PRP and changes in landownership over time. Although the Third Circuit's divisibility analysis is fairly cursory, its reluctance to apportion landowner liability on the basis of land boundaries is informative. *Rohm and Haas* indicates that the mere percentage of land owned by one PRP relative to the entire facility cannot alone be a basis for apportionment, as it does not provide a minimally reliable basis for tracing the proportion of leakage, contamination, *or* cleanup costs associated with the entire parcel.

Contrary to *Rohm and Haas*, the district court's analysis gave star billing to the percentage of land ownership, even in a unified facility.[27] We agree with *Rohm and Haas* that this approach, seemingly straightforward though it is, fails in most

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[27] Judge Moore, concurring in the result in *Township of Brighton*, asserted that a court can *never* apportion liability for contamination at a single facility on the basis of geography. *Township of Brighton*, 153 F.3d at 331 n. 12 (Moore, J., concurring in result). We do not go as far as Judge Moore. We do note, however, that purely geographic apportionment of a single facility is unlikely to be appropriate if operations on the two portions are intertwined to the extent present in this case.

circumstances to comport with the "reasonable basis" test, as the facts of this case illustrate.

The Arvin site was a single facility. CERCLA premises landowner liability on ownership of a *facility*, not on ownership of a certain parcel of land that is part of a facility. The operations on the site were dynamic, with fertilizer rigs stored on the Railroad parcel and filled up on the B & B parcel. Empty pesticide cans were stored on the Railroad parcel before they were crushed and disposed of. After the 1978 windstorm, tanks were stored all over the facility, including on the Railroad parcel. A simple calculation of land ownership does not capture any data that reflect this dynamic, unitary operation of the single Arvin facility.

In addition, the synergistic use of different parts of the Arvin site makes division based on percentage of land ownership particularly untenable. The record shows that B & B leased the Railroad parcel to accommodate its expanding operations. The Railroad parcel added an unquantifiable and perhaps exponential amount to B & B's soil contamination. Were the Railroad parcel not part of the facility, there would have been less overall storage capacity. One can assume that a smaller amount of toxic chemicals would have been delivered to, and spilled on, the Arvin site. The fertilizer rigs, for example, were stored almost exclusively on the Railroad parcel. Had that parcel not been available, less fertilizer might have been delivered to—and leaked onto—the Arvin parcel. As these descriptions suggest, nothing in the record supports a conclusion that the leakage of contaminants that ended up on the B & B parcel occurred on each parcel in proportion to its size.

Instead, given the circumstances of this case, more pertinent comparisons would be the proportion of the amount of chemicals stored, poured from one container

to another, or spilled on each parcel. For example, were adequate records kept, it would be possible to estimate the amount of leakage attributable to activities on the Railroad parcel, how that leakage traveled to and contaminated the soil and groundwater under the Arvin parcel, and the cost of cleaning up that contamination.

But none of this data is in the record. It may well be that such information is, as a practical matter, not available for periods long in the past, when future environmental cleanup was not contemplated. Unlike records concerning the amount of toxic chemicals produced by a given operator of a facility, records that separate out, with any precision, the amount of toxic chemicals stored on one part of a facility as opposed to another would have had little utility to B & B, the operator of the facility, and none to the Railroads, the owners of the parcel. This observation is true in spades for the more directly pertinent data, such as the amount of leakage on the Railroad parcel, the amount of that leakage that flowed onto the B & B parcel, and the amount of that residue that remained as contamination under the B & B parcel when the cleanup began.

So the failure to keep these records is quite understandable. But these practical considerations cannot justify a "meat-axe" approach to the divisibility issue, premised on percentages of land ownership, as a means of adjusting for the difficulties of proving divisibility with precision when PRP status is based on land ownership alone. Such an approach would be tantamount to a disagreement with the imposition of no-fault land ownership liability. Congress, however, created precisely such liability, placing the responsibility to pay for environmental cleanup on parties, such as the Railroads, that profited from the

circumstances giving rise to the contamination so that the taxpayers are not left holding the tab. The risk of lack of adequate information for meaningful division of harm therefore must rest on the responsible parties, even when that information is extremely hard to come by.

b. Period of Ownership

Just as the district court's land area calculations did not correspond to the harms in this case, its simple fraction based on the time that the Railroads owned the land cannot be a basis for apportionment. The fraction it chose assumes constant leakage on the facility as a whole or constant contamination traceable to the facility as a whole for each time period; no evidence suggests that to be the case. Again, if adequate information were available, it would make sense to eliminate the Railroads' liability for the period before B & B leased the Railroad parcel. *See, e.g., Rohm and Haas*, 2 F.3d at 1280. The evidentiary vacuum concerning the amount of contamination traceable to the pre-lease period, however, precludes any such calculation here.

c. Types of Hazardous Products

While many of the district court's calculations were factually correct but legally insufficient, its decision to assign a two-thirds fraction to represent the present types of hazardous products contains a basic factual error. All three chemicals were on the Railroad parcel at some time. There is no evidence as to which chemicals spilled on the parcel, where on the parcel they spilled, or when they spilled. Yet, there *is* evidence that there may well have been leakage on the Railroad parcel of D-D, the chemical the district court excluded in its calculations. Given the record, the district court clearly erred in its attempt to rely on the

proportion of hazardous products present on the Railroad parcel.

d. Conclusion

It will often be the case that a landowner PRP will not be able to prove in any detail the degree of contamination traceable to activities on its land. A landowner PRP need not be involved at all in the disposal of hazardous chemicals and so will often have no information concerning that disposal or its impact. The net result of our approach to apportionment of liability, consequently, may be that landowner PRPs, who typically have the least direct involvement in generating the contamination, will be the least able to prove divisibility. And contribution "is not a complete panacea since it frequently will be difficult for defendants to locate a sufficient number of additional, solvent parties." *O'Neil v. Picillo*, 883 F.2d 176, 179 (1st Cir.1989).

While the result may appear to fault a landowner PRP for failing to keep records proving the minor connection of its land to the contamination on the facility as a whole, CERCLA is not a statute concerned with allocation of fault. Instead, CERCLA seeks to distribute economic burdens. Joint and several liability, even for PRPs with a minor connection to the contaminated facility, is the norm, designed to assure, as far as possible, that *some* entity with connection to the contamination picks up the tab. Apportionment is the exception, available only in those circumstances in which adequate records *were* kept and the harm *is* meaningfully divisible.

In sum, although most of the numbers the district court used were sufficiently exact, they bore insufficient logical connection to the pertinent question: What part of the contaminants found on the Arvin

parcel were attributable to the presence of toxic substances or to activities on the Railroad parcel? We therefore reject the district court's apportionment calculation and hold that the Railroads have failed to prove any reasonable basis for apportioning liability for the costs of remediation.

3. Shell

Shell's contribution to the contamination of the Arvin site is easier to isolate than that of the Railroads', as it involved ascertainable pollutants entering the soil in a specific way. Shell thus had a greater prospect of succeeding on divisibility than did the Railroads, as there is *some* volumetric basis for comparing its contribution to the total volume of contamination on the Arvin site.

Nonetheless, the evidence actually produced was insufficient to allow even a rough approximation of the contamination remaining on the facility, either directly or through the presumption that the pro rata cost of remediating contamination is likely to be equivalent to a PRP's pro rata share of contamination. Indeed, Shell produced only evidence concerning leakage.

Such leakage or disposal evidence cannot suffice in the present circumstances as a basis for apportioning the harm in question. As we have explained, contamination—as distinct from leakage—is the necessary consideration. Where there is disposal of multiple contaminants, courts have demanded a "showing [of] a relationship between waste volume, the release of hazardous substances, and the harm at the site." *Monsanto*, 858 F.2d at 172. Factors such as "relative toxicity, migratory potential, and synergistic capacity of the hazardous substances" are relevant to demonstrating this relationship. *Id.* at 172 n. 26. Alternatively, volumetric calculations of

contaminating chemicals—those *remaining* in the environment and requiring cleanup—*could be* sufficiently specific for apportionment. *See Hercules*, 247 F.3d at 719; *Bell Petroleum*, 3 F.3d at 903. But Shell provided no evidence regarding such factors. It thus failed to prove whether its leaked chemicals contaminated the soil in any specific proportion as compared to other chemicals spilled at the site. *See United States v. Agway, Inc.*, 193 F.Supp.2d 545, 549 (N.D.N.Y.2002) (noting that defendants whose products have become commingled in the soil "face an uphill battle in attempting to demonstrate that volumetric contribution is a reasonable basis for apportioning liability of a single harm").

To fill these evidentiary gaps, the district court assumed equal contamination and cleanup cost from all the chemicals' leakage. This methodology entirely failed to account for the possibility that leakage of one chemical might contribute to more contamination than leakage of another, because of their specific physical properties. Similarly, the cost of cleanup depends upon which contaminants are present; some contaminants are more expensive than others to extract from the soil.

Moreover, even as an approximation of *leakage*, the district court's calculations were too speculative to support apportionment. *Chem-Nuclear* is informative in this regard. In *Chem-Nuclear*, the defendant disposed of drums of hazardous waste at several facilities. 292 F.3d at 255. At least eighty drums found at a single site were attributable to the defendant. *Id.* The defendant could not prove, however, that it was responsible only for those eighty drums, and therefore was not entitled to apportionment. *Id.* at 259-61. Although the defendant provided evidence supporting inferences regarding where its drums went, the court

refused to accept these inferences as sufficient proof. *Id.* at 260.

Here, the court estimated the volume of Shell's chemicals that leaked from each transfer based on data samples that do not readily extrapolate to total leakage over the entire twenty-three-year period that Shell supplied B & B with D-D. The court used figures from only six years of B & B's purchases of Shell D-D to calculate the average D-D transferred at the Arvin site each year, yet provided no basis for assuming equal purchases each year. The court then based its estimate of the amount of D-D spilled during each transfer on guesses by witnesses.[28] Also, although D-D was known to leak when sight gauges on D-D rigs broke, the court had no evidence of how much D-D leaked under these circumstances and, therefore, did not add any quantity for sight gauge leakage into the calculation. Even if each of these estimates alone might have been reasonable, the resulting combined estimate is too speculative to serve as an accurate basis for ascertaining leakage, let alone contamination or the costs of cleaning up the contamination.[29]

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[28] For the quantity of D-D that spilled during transfer from Shell's carriers' trucks to the D-D rigs, for example, the court relied on estimates of witnesses that the spill was between a cup and a quart. It then calculated "3 cups x 23 years = 2,691 cups => 168 gallons of D-D."

[29] There is something of a circuit split on the degree of specificity of proof necessary to establish the amount of liability apportioned to each PRP. According to some courts, proving up the precise proportion attributable to each PRP is a "very difficult proposition," *Control Data Corp. v. S.C.S.C. Corp.*, 53 F.3d 930, 934 n. 4 (8th Cir.1995), requiring "concrete and specific" evidence in support of any proposed apportionment, *Hercules*, 247 F.3d at 718. The defendant cannot rely on a "chain of possible inferences." *Chem-Nuclear*, 292 F.3d at 260. In contrast, other courts have

Again, Shell's harm was *capable* of apportionment. Shell could have provided data showing the volume of chemicals shipped to B & B every year, or more precise estimates of the average volume of leaked chemicals during the transfer process. Data connecting the properties of the various chemicals leaked at the site to the likelihood that they contributed to the contamination could have been presented and considered. But the record before us provides none of that information, most likely because Shell put its eggs in the no-liability basket.

In the end, the district court's apportionment analysis with regard to Shell came closer to meeting the legal standard than the method it used with respect to the Railroads. We hold, nonetheless, that on the facts of this case as the district court found them, there was no reasonable basis for apportioning the pertinent harm caused by Shell.

B. "Arranger" Liability

Under CERCLA, "any person who by contract, agreement, or otherwise arranged for disposal or treatment, or arranged with a transporter for

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permitted informal estimates or data rather than more exact calculations. *See Bell Petroleum*, 3 F.3d at 903-04 (allowing estimation of the proportion of contamination produced by each of a series of successive operators of a facility, where reliable approximations were simple because there was a single chemical produced by the successive operators each of whom operated the facility similarly); *see also Hercules*, 247 F.3d at 719 (relying on *Bell Petroleum*, 3 F.3d at 895-96, and holding that the defendant need not show that there was no possibility that it contributed to the harm, because certain approximations can suffice). Aside from noting, as we have, *supra* n. 27, that logical, supportable inferences from the record facts are, as always, permissible, we need not weigh in on this dispute, as the district court's extrapolations could not be upheld under even a forgiving standard.

transport for disposal or treatment, of hazardous substances owned or possessed by such person" is liable. § 9607(a)(3). Shell claims that (1) the district court applied the wrong legal standard in determining whether Shell was an "arranger" under § 9607(a); (2) the "useful product" doctrine precludes imposition of "arranger" liability on Shell; (3) Shell lacked ownership and control over the chemicals at the time of the transfers and thus the district court could not find that it had arranged them; and (4) because D-D evaporates or disperses rather than remaining in toxic form in the soil, the district court erred when it determined that Shell contributed to the groundwater contamination. We reject these contentions and affirm the district court's ruling on the "arranger" issue.

We review the district court's interpretation of CERCLA to determine the legal standard for arranger liability as a question of law, reviewed de novo. *Carson Harbor Vill.*, 270 F.3d at 870. We review the district court's factual determinations regarding Shell's operations for clear error. *W. Prop. Serv. Corp. v. Shell Oil Co.*, 358 F.3d 678, 685 (9th Cir.2004).

1. Requirements for "Arranger" Liability

CERCLA does not define "arrange[ ]." We have avoided giving the term "arranger" too narrow an interpretation to avoid frustrating CERCLA's goal of requiring that companies responsible for the introduction of hazardous waste into the environment pay for remediation. *Pakootas v. Teck Cominco Metals, Ltd.*, 452 F.3d 1066, 1081 (9th Cir.2006); *Cadillac Fairview/Cal., Inc. v. United States*, 41 F.3d 562, 565 n. 4 (9th Cir.1994) (per curiam) (*citing with approval United States v. Aceto Agric. Chems. Corp.*, 872 F.2d 1373, 1380 (8th Cir.1989)); *see also Jones-Hamilton Co. v. Beazer Materials & Servs., Inc.*, 973 F.2d 688, 694-95 (9th Cir.1992) (discussing *Aceto*, 872

F.2d at 1380). Accordingly, we have recognized, in addition to "direct" arranger liability, a "broader" category of arranger liability, *see United States v. Shell Oil Co.*, 294 F.3d 1045, 1054-55 (9th Cir.2002), in which disposal of hazardous wastes is a foreseeable byproduct of, but not the purpose of, the transaction giving rise to PRP status.

"Direct" arranger liability—also referred to as "'traditional' direct" arranger liability—involves transactions in which the central purpose of the transaction is disposing of hazardous wastes. *See id.*; *see, e.g., Cadillac Fairview*, 41 F.3d at 563-65 (involving rubber companies that transferred contaminated styrene to Dow Chemical for reprocessing); *Catellus Dev. Corp. v. United States*, 34 F.3d 748, 749-50 (9th Cir.1994) (involving a company that sold used automotive batteries to a lead reclamation plant). In contrast, "broader" arranger liability involves transactions that contemplate disposal as a *part* of, but not the focus of, the transaction; the "arranger" is either the source of the pollution or manages its disposal. *See Shell Oil*, 294 F.3d at 1058. In the "broader" arranger liability cases, such as *Shell Oil*, we examined the connection between the alleged arranger transaction and the disposal and decided whether the transaction necessarily constituted an arrangement for disposal of hazardous substances, whatever immediate form it may have taken.

These broader arranger cases can involve situations, like the present one, in which the alleged arrangers did not contract directly for the disposal of hazardous substances but did contract for the sale or transfer of hazardous substances, which were then disposed of. *See, e.g., Fla. Power & Light Co. v. Allis Chalmers Corp.*, 893 F.2d 1313, 1315, 1318 (11th Cir.1990) (involving purchaser and recycler that sued

manufacturer of transformers for cleanup costs from later disposal); *Mathews v. Dow Chemical Co.*, 947 F.Supp. 1517, 1519-20 (D.Colo.1996) (involving neighbors of chemical company who sued manufacturer of paint thinner for contamination resulting from packaging paint thinner); *Courtaulds Aerospace, Inc. v. Huffman*, 826 F.Supp. 345, 347-48, 353-54 (E.D.Cal.1993) (involving neighbor of smelting plant who sued companies that contracted with plant for burning and smelting of copper wire for resulting contamination). There are no Ninth Circuit cases in this category.[30]

The inclusion of such circumstances within the "arranger" concept, however, accords with the statutory language and structure as a whole. To be an "arranger," one must "arrange[] for disposal or treatment, or arrange[] with a transporter for transport for disposal or treatment, of hazardous substances ...." § 9607(a)(3). CERCLA's definition of "disposal," in turn, includes "the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or

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[30] Although *Shell Oil* involved "broader" arranger liability, it concerned "arranger" liability of a customer, rather than a producer, of hazardous materials. 294 F.3d at 1056. There, the defendant oil companies sought to hold the United States liable as an "arranger" because the federal government had purchased large quantities of high octane fuel for military use; the process used by the oil companies to refine the fuel resulted in toxic waste that the oil companies later dumped at a site in California. *Id.* Because the United States was the end purchaser, never owned the intervening toxic products used in the refining process, and did not contract out the crucial, waste-producing intermediate step, we held that it was not an arranger under § 9607(a)(3). *Id.* at 1056-59.

constituent thereof may enter the environment or be ... discharged into any waters, including ground waters." § 6903(3) (referred to by § 9601(29)). That "disposal" includes such unintentional processes as "leaking" indicates that "disposal" need not be purposeful. *See Carson Harbor Vill.*, 270 F.3d at 880 (holding that "leaking" may not "require affirmative ... conduct" (internal quotation marks omitted) (quoting and adopting interpretation of *United States v. CDMG Realty Co.*, 96 F.3d 706, 714 (3d Cir.1996))). Thus, an entity can be an arranger even if it did not intend to dispose of the product. Arranging for a transaction in which there necessarily would be leakage or some other form of disposal of hazardous substances is sufficient.

2. "Useful Product" Doctrine

While adopting a generally expansive view of arranger liability, we have refused to hold manufacturers liable as arrangers for selling a useful product containing or generating hazardous substances that *later* were disposed of. *See, e.g., 3550 Stevens Creek Assocs. v. Barclays Bank of Cal.*, 915 F.2d 1355, 1362-65 (9th Cir.1990). As *Stevens Creek* and other "useful product" cases recognize, liability cannot extend so far as to include *all* manufacturers of hazardous substances, on the theory that there will have to be disposal of the substances some time down the line, *after* it is used as intended. *See, e.g., Stevens Creek*, 915 F.2d at 1362-65 (refusing to hold manufacturer liable for costs of removing asbestos from building); *Fla. Power & Light*, 893 F.2d at 1318-19 (refusing to hold manufacturer of transformers liable for subsequent release of chemicals upon disposal of transformers). Also, the asserted liability in "useful product" cases generally involved only the normal use of those chemicals. *See, e.g., Jordan v. S. Wood*

Piedmont Co., 805 F.Supp. 1575, 1577 (S.D.Ga.1992) (involving the sale of chemicals to treat wood and the contamination from the wood treatment process); *Edward Hines Lumber Co. v. Vulcan Materials Co.*, 685 F.Supp. 651, 653 (N.D.Ill.1988) (same).

The useful product cases have no applicability where, as here, the sale of a useful product necessarily and immediately results in the leakage of hazardous substances. In that circumstance, the leaked portions of the hazardous substances are *never* used for their intended purpose. *See Zands v. Nelson*, 779 F.Supp. 1254, 1262 (S.D.Cal.1991) (stating that "gasoline is no longer a useful product after it leaks into, and contaminates, the soil"); *see also Aceto*, 872 F.2d at 1381 (rejecting application of the useful product doctrine where "waste is generated *and disposed of* contemporaneously with the process" (emphasis added)).

Here, although Shell sold B & B a useful product, leakage of some of that product *before* B & B could use it was both inherent in the transfer process arranged by Shell and contemporaneous with that process.[31] Shell arranged for delivery of the substances to the site by its subcontractors; was aware of, and to some degree dictated, the transfer arrangements; knew that some leakage was likely in the transfer process; and provided advice and supervision concerning safe transfer and storage. Disposal of a hazardous

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[31] For this reason, we also reject Shell's argument that, because manufacturers are taxed to provide money for the Superfund, Congress could not, without more, have intended for them to be subject to liability as arrangers. *See* 26 U.S.C. §§ 4661, 4662. Shell's liability derives not from its role as a manufacturer of a useful product but rather from its role in leakage prior to use. The Superfund tax is wholly irrelevant to the latter imposition of liability and certainly does not bar it.

substance was thus a necessary part of the sale and delivery process.

Put another way, the district court did not assign arranger liability to Shell for contamination resulting from the application of Shell's useful products to the soil as fertilizers or fumigants, or for disposal of contaminated soil after the products were used. Instead, the district court assigned arranger liability on the portion of product that never made it to the fields for its intended use but was disposed of prior to use. Because Shell's liability here stems from the leaked chemicals rather than the fertilizer that was used as fertilizer, the useful product doctrine is not applicable.

3. Control and Ownership

Much of the district court's analysis relies on the factual determination that spills would necessarily occur during the transfer of Shell's chemicals to B & B. Shell maintains that this finding was inadequate, because Shell did not itself transport the chemicals or participate in transferring the chemicals to B & B's containers. Central to this contention is Shell's insistence that it lacked ownership and control of the chemicals at the time of transfer and so could not be an "arranger." We do not agree that the district court's findings about Shell's involvement were insufficient to support "arranger" liability.

There was evidence before the district court that: (1) Spills occurred *every time* the deliveries were made; (2) Shell arranged for delivery and chose the common carrier that transported its product to the Arvin site; (3) Shell changed its delivery process so as to require the use of large storage tanks, thus necessitating the transfer of large quantities of chemicals and causing leakage from corrosion of the large steel tanks; (4)

Shell provided a rebate for improvements in B & B's bulk handling and safety facilities and required an inspection by a qualified engineer; (5) Shell regularly would reduce the purchase price of the D-D, in an amount the district court concluded was linked to loss from leakage; and (6) Shell distributed a manual and created a checklist of the manual requirements, to ensure that D-D tanks were being operated in accordance with Shell's safety instructions.

The parties vigorously dispute whether, given these facts, Shell owned the pesticide during the transfer and controlled the transfer process. Although the district court addressed these questions and resolved them against Shell, we do not enter this controversy. The text of the statute does not require that the arranger own the hazardous wastes, either at the time the "arranger" arranged for the transaction or at the time of transfer of ownership. *See Pakootas*, 452 F.3d at 1081. Indeed, to require ownership at the time of disposal "would make it too easy for a party, wishing to dispose of a hazardous substance, to escape by a sale its responsibility to see that the substance is safely disposed of." *Catellus*, 34 F.3d at 752. Nor is control a statutory requirement, *Cadillac Fairview*, 41 F.3d at 565, although it has been viewed as a pertinent consideration in cases quite different from this one.

Where an owner of hazardous substances *directly* "arranges" for disposal—by, for example, using a hazardous substance disposal company—that owner is plainly an "arranger" even if it has nothing more to do with disposal. *See, e.g., Catellus*, 34 F.3d at 752. In "broader" arranger liability cases, however, we have tended to view control as a "crucial element" in determining whether the party arranged for disposal. *Shell Oil*, 294 F.3d at 1055. We also have viewed ownership of hazardous substances at the time of

disposal as an important factor in nontraditional, indirect arranger liability cases. *See Jones-Hamilton*, 973 F.2d at 695 (*relying on Aceto*, 872 F.2d at 1380).

None of these cases, however, indicates that ownership or control at the time of transfer are the sine qua non of nontraditional arranger liability. Instead, ownership and control at time of disposal are useful indices or clues toward the end of "look[ing] beyond defendants' characterizations to determine whether a transaction in fact involves an arrangement for the disposal of a hazardous substance." *Aceto*, 872 F.2d at 1381. In *Shell Oil*, for example, the government *never* owned the chemicals before disposal occurred, so control over the substances was an important factor in determining whether or not the government could have "arranged" for disposal. *Shell Oil*, 294 F.3d at 1057-59.

Here, ownership at the time of disposal is not an informative consideration, and control is informative only in light of additional considerations. Unlike in *Shell Oil*, where the absence of *any* ownership or control was a clue concerning whether the sales transaction necessarily contemplated disposal as an inherent part of the transaction, Shell here owned the chemicals at the time the sale was entered into. The statute requires nothing more in terms of ownership. We therefore need not determine the precise moment when ownership transferred to B & B. As to the control question, the district court's findings, recited above, demonstrate that Shell had sufficient control over, and knowledge of, the transfer process to be considered an "arranger," within the meaning of CERCLA, for the disposal of the chemicals that leaked.

4. Groundwater Contamination

Shell, finally, contends that the court erred when it determined that it contributed to the groundwater contamination, maintaining that D-D evaporates or disperses rather than remaining in toxic form in the soil. The district court's analysis on this issue is factually complex and based on several weeks of testimony. The district court made specific findings that D-D can indeed enter groundwater. Those findings are based on the testimony of experts whom the court found persuasive. In light of the complexity of the science and the substantial expert evidence supporting the finding, the district court's determination was not clearly erroneous.

IV. Conclusion

The district court erred in determining that the harm in this case could be apportioned on this record. Given the district court's erroneous approach and the paucity of record evidence, there is no reasonable basis for apportioning the damages attributable to the Railroads' activity. Shell's liability is a closer call, but the evidence on the record in that regard is also insufficient to support apportionment.

The district court followed the proper analysis in finding that Shell is liable as an arranger. Shell arranged for the sale and transfer of chemicals under circumstances in which a known, inherent part of that transfer was the leakage, and so the disposal, of those chemicals.

We therefore reverse as to the district court's finding on apportionment. We affirm the district court's findings regarding both the Railroads' and Shell's liability. The Railroads and Shell are jointly and severally liable for the harm at the Arvin site, except

with regard to the so-called "Dinoseb hot spot."[32] We remand for further proceedings not inconsistent with this opinion.

REVERSED in part and AFFIRMED in part.

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[32] The district court found that the "Dinoseb hot spot" was a discrete area contaminated by Dinoseb (a Dow product) as the result of a major spill in 1983, that Shell did not manufacture or ship that product, and that Shell thus bore no responsibility for any part of the $1.3 million cost of cleaning up this discrete spill. The governments did not challenge this finding on appeal. That finding therefore stands, and the district court should not include the $1.3 million dollar cleanup costs for the "Dinoseb hot spot" in the calculation of Shell's liability.

TITLE 42. THE PUBLIC HEALTH AND WELFARE

CHAPTER 103. COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY

SUBCHAPTER I. HAZARDOUS SUBSTANCES RELEASES, LIABILITY, COMPENSATION

42 U.S.C. § 9601

§ 9601. Definitions

For purpose of this subchapter—

(1) The term "act of God" means an unanticipated grave natural disaster or other natural phenomenon of an exceptional, inevitable, and irresistible character, the effects of which could not have been prevented or avoided by the exercise of due care or foresight.

(2) The term "Administrator" means the Administrator of the United States Environmental Protection Agency.

(3) The term "barrel" means forty-two United States gallons at sixty degrees Fahrenheit.

(4) The term "claim" means a demand in writing for a sum certain.

(5) The term "claimant" means any person who presents a claim for compensation under this chapter.

(6) The term "damages" means damages for injury or loss of natural resources as set forth in section 9607(a) or 9611(b) of this title.

(7) The term "drinking water supply" means any raw or finished water source that is or may be used by a public water system (as defined in the Safe Drinking Water Act [42 U.S.C. 300f et seq.]) or as drinking water by one or more individuals.

(8) The term "environment" means (A) the navigable waters, the waters of the contiguous zone, and the ocean waters of which the natural resources are under the exclusive management authority of the United States under the Magnuson-Stevens Fishery Conservation and Management Act [16 U.S.C. 1801 et seq.], and (B) any other surface water, ground water, drinking water supply, land surface or subsurface strata, or ambient air within the United States or under the jurisdiction of the United States.

(9) The term "facility" means (A) any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft, or (B) any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located; but does not include any consumer product in consumer use or any vessel.

(10) The term "federally permitted release" means (A) discharges in compliance with a permit under section 1342 of title 33, (B) discharges resulting from circumstances identified and reviewed and made part of the public record with respect to a permit issued or modified under section 1342 of title 33 and subject to a condition of such permit, (C) continuous or anticipated intermittent discharges from a point source, identified in a permit or permit application under section 1342 of

Title 33, which are caused by events occurring within the scope of relevant operating or treatment systems, (D) discharges in compliance with a legally enforceable permit under section 1344 of title 33, (E) releases in compliance with a legally enforceable final permit issued pursuant to section 3005(a) through (d) of the Solid Waste Disposal Act [42 U.S.C. 6925(a)–(d)] from a hazardous waste treatment, storage, or disposal facility when such permit specifically identifies the hazardous substances and makes such substances subject to a standard of practice, control procedure or bioassay limitation or condition, or other control on the hazardous substances in such releases, (F) any release in compliance with a legally enforceable permit issued under section 1412 of title 33 of[1] section 1413 of title 33, (G) any injection of fluids authorized under Federal underground injection control programs or State programs submitted for Federal approval (and not disapproved by the Administrator of the Environmental Protection Agency) pursuant to part C of the Safe Drinking Water Act [42 U.S.C. 300h et seq.], (H) any emission into the air subject to a permit or control regulation under section 111 [42 U.S.C. 7411], section 112 [42 U.S.C. 7412], title I part C [42 U.S.C. 7470 et seq.], title I part D [42 U.S.C. 7501 et seq.], or State implementation plans submitted in accordance with section 110 of the Clean Air Act [42 U.S.C. 7410] (and not disapproved by the Administrator of the Environmental Protection Agency), including any schedule or waiver granted, promulgated, or approved under these sections, (I) any injection of fluids or other materials authorized under applicable State law (i) for the purpose of stimulating or treating wells for the production of crude oil, natural

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[1] So in original. Probably should be "or".

gas, or water, (ii) for the purpose of secondary, tertiary, or other enhanced recovery of crude oil or natural gas, or (iii) which are brought to the surface in conjunction with the production of crude oil or natural gas and which are reinjected, (J) the introduction of any pollutant into a publicly owned treatment works when such pollutant is specified in and in compliance with applicable pretreatment standards of section 1317(b) or (c) of title 33 and enforceable requirements in a pretreatment program submitted by a State or municipality for Federal approval under section 1342 of title 33, and (K) any release of source, special nuclear, or byproduct material, as those terms are defined in the Atomic Energy Act of 1954 [42 U.S.C. 2011 et seq.], in compliance with a legally enforceable license, permit, regulation, or order issued pursuant to the Atomic Energy Act of 1954.

(11) The term "Fund" or "Trust Fund" means the Hazardous Substance Superfund established by section 9507 of title 26.

(12) The term "ground water" means water in a saturated zone or stratum beneath the surface of land or water.

(13) The term "guarantor" means any person, other than the owner or operator, who provides evidence of financial responsibility for an owner or operator under this chapter.

(14) The term "hazardous substance" means (A) any substance designated pursuant to section 1321(b)(2)(A) of title 33, (B) any element, compound, mixture, solution, or substance designated pursuant to section 9602 of this title, (C) any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal

Act [42 U.S.C. 6921] (but not including any waste the regulation of which under the Solid Waste Disposal Act [42 U.S.C. 6901 et seq.] has been suspended by Act of Congress), (D) any toxic pollutant listed under section 1317(a) of title 33, (E) any hazardous air pollutant listed under section 112 of the Clean Air Act [42 U.S.C. 7412], and (F) any imminently hazardous chemical substance or mixture with respect to which the Administrator has taken action pursuant to section 2606 of title 15. The term does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (A) through (F) of this paragraph, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).

(15) The term "navigable waters" or "navigable waters of the United States" means the waters of the United States, including the territorial seas.

(16) The term "natural resources" means land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States (including the resources of the fishery conservation zone established by the Magnuson-Stevens Fishery Conservation and Management Act [16 U.S.C. 1801 et seq.]) any State or local government, any foreign government, any Indian tribe, or, if such resources are subject to a trust restriction on alienation, any member of an Indian tribe.

(17) The term "offshore facility" means any facility of any kind located in, on, or under, any of the

navigable waters of the United States, and any facility of any kind which is subject to the jurisdiction of the United States and is located in, on, or under any other waters, other than a vessel or a public vessel.

(18) The term "onshore facility" means any facility (including, but not limited to, motor vehicles and rolling stock) of any kind located in, on, or under, any land or nonnavigable waters within the United States.

(19) The term "otherwise subject to the jurisdiction of the United States" means subject to the jurisdiction of the United States by virtue of United States citizenship, United States vessel documentation or numbering, or as provided by international agreement to which the United States is a party.

(20)(A) The term "owner or operator" means (i) in the case of a vessel, any person owning, operating, or chartering by demise, such vessel, (ii) in the case of an onshore facility or an offshore facility, any person owning or operating such facility, and (iii) in the case of any facility, title or control of which was conveyed due to bankruptcy, foreclosure, tax delinquency, abandonment, or similar means to a unit of State or local government, any person who owned, operated, or otherwise controlled activities at such facility immediately beforehand. Such term does not include a person, who, without participating in the management of a vessel or facility, holds indicia of ownership primarily to protect his security interest in the vessel or facility.

* * *

42 U.S.C. § 9607

§ 9607. Liability

(a) Covered persons; scope; recoverable costs and damages; interest rate; "comparable maturity" date.

Notwithstanding any other provision or rule of law, and subject only to the defenses set forth in subsection (b) of this section—

(1) the owner and operator of a vessel or a facility,

(2) any person who at the time of disposal of any hazardous substance owned or operated any facility at which such hazardous substances were disposed of,

(3) any person who by contract, agreement, or otherwise arranged for disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous substances owned or possessed by such person, by any other party or entity, at any facility or incineration vessel owned or operated by another party or entity and containing such hazardous substances, and

(4) any person who accepts or accepted any hazardous substances for transport to disposal or treatment facilities, incineration vessels or sites selected by such person, from which there is a release, or a threatened release which causes the incurrence of response costs, of a hazardous substance, shall be liable for—

(A) all costs of removal or remedial action incurred by the United States Government or

a State or an Indian tribe not inconsistent with the national contingency plan;

(B) any other necessary costs of response incurred by any other person consistent with the national contingency plan;

(C) damages for injury to, destruction of, or loss of natural resources, including the reasonable costs of assessing such injury, destruction, or loss resulting from such a release; and

(D) the costs of any health assessment or health effects study carried out under section 9604(i) of this title.

* * *

OPPOSITION BRIEF

101

FILED
8-25-08

(4) (4)

Nos. 07-1601 and 07-1607

In the Supreme Court of the United States

BURLINGTON NORTHERN AND SANTA FE RAILWAY COMPANY, ET AL., PETITIONERS

v.

UNITED STATES OF AMERICA, ET AL.

SHELL OIL COMPANY, PETITIONER

v.

UNITED STATES OF AMERICA, ET AL.

ON PETITIONS FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

BRIEF FOR THE UNITED STATES IN OPPOSITION

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QUESTIONS PRESENTED

1. Whether the court of appeals correctly affirmed the district court's determination that petitioner Shell Oil Company is liable under Section 107(a)(3), 42 U.S.C. 9607(a)(3), of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C. 9601 *et seq.*, as an entity that "arranged for disposal" of hazardous substances.

2. Whether the court of appeals properly held petitioners jointly and severally liable under CERCLA for the response costs of the United States and California governments, based on the court's conclusion that petitioners did not satisfy their evidentiary burden of providing a reasonable basis to apportion liability.

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ON PETITIONS FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

BRIEF FOR THE UNITED STATES IN OPPOSITION

OPINIONS BELOW

The second amended opinion of the court of appeals (Pet. App. 1a-57a) is reported at 520 F.3d 918.[1] The first amended opinion of the court of appeals (Pet. App. 263a-310a) is reported at 502 F.3d 781. The initial opinion of the court of appeals is reported at 479 F.3d 1113. The

[1] Unless otherwise noted, all references to the "Pet. App." are to the appendix in the petition for a writ of certiorari in No. 07-1601.

amended opinion and order of the district court (Pet. App. 82a-262a) is unreported.

JURISDICTION

The judgment of the court of appeals was entered on March 16, 2007. The petitions for rehearing were denied on March 25, 2008 (Pet. App. 3a). The petitions for a writ of certiorari were filed on June 23, 2008. The jurisdiction of this Court is invoked under 28 U.S.C. 1254(1).

STATEMENT

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C. 9601 *et seq.*, authorizes the United States to protect the public and the environment from the harm caused by the release or threat of release of hazardous substances into the environment. CERCLA also establishes a mechanism by which federal and state governments can recover their cleanup expenses from the parties responsible for the contamination.

This case arises from actions taken by the United States and the State of California to address hazardous-substance contamination at a former agricultural chemical storage and distribution facility located in Arvin, California. The governments brought a cost-recovery action against petitioners, two railroad companies (the Railroads) and a chemical manufacturer (Shell), under CERCLA Section 107(a), 42 U.S.C. 9607(a). After a bench trial, the district court found the Railroads and Shell to be liable parties under CERCLA, and further found that the Railroads and Shell were liable for nine percent and six percent of the recovery costs, respectively. The court of appeals affirmed in part and reversed in part, holding that Shell was a liable party and

that petitioners were jointly and severally liable. Pet. App. 1a-57a.

1. Congress enacted CERCLA "in response to the serious environmental and health risks posed by industrial pollution." *United States* v. *Bestfoods*, 524 U.S. 51, 55 (1998). CERCLA "grants the President broad power to command government agencies and private parties to clean up hazardous waste sites." *Key Tronic Corp.* v. *United States*, 511 U.S. 809, 814 (1994). It "both provides a mechanism for cleaning up hazardous waste sites, and imposes the costs of the cleanup on those responsible for the contamination." *Pennsylvania* v. *Union Gas Co.*, 491 U.S. 1, 7 (1989) (citations omitted); *Bestfoods*, 524 U.S. at 55-56 & n.1. "The remedy that Congress felt it needed in CERCLA is sweeping: *everyone* who is potentially responsible for hazardous-waste contamination may be forced to contribute to the costs of cleanup." *Id.* at 56 n.1 (quoting *Union Gas*, 491 U.S. at 21 (plurality opinion of Brennan, J.)).

The Environmental Protection Agency can clean up hazardous substance sites, either by undertaking remediation itself (see 42 U.S.C. 9604 (2000 & Supp. V 2005)) or by compelling, through an administrative or judicial order, the responsible parties to undertake remediation under government supervision (see 42 U.S.C. 9606(a)). Under either approach, the United States may recover from responsible parties the response costs it incurs through an action under CERCLA Section 107(a). See 42 U.S.C. 9607(a).

To establish a prima facie case under Section 107(a), the United States must show a "release" or "threatened release" of a "hazardous substance" from a "facility" causing the United States to incur cleanup costs. The United States must further establish that the defendant

falls within at least one of the four following classes of responsible persons: (1) the current owner and operator of the facility, (2) the owner or operator of the facility at the time of any disposal of hazardous substances, (3) any person who arranged for disposal or treatment of hazardous substances owned or possessed by such person, and (4) any person who accepts any hazardous substances for transport to disposal or treatment facilities. 42 U.S.C. 9607(a). Subject to limited defenses, responsible parties are strictly liable for "all costs of removal or remedial action incurred" by the United States "not inconsistent with the national contingency plan." 42 U.S.C. 9607(a)(4)(A) and (b); 40 C.F.R. Pt. 300.

Courts have consistently ruled that, once the United States has established CERCLA liability, the responsible party is jointly and severally liable for the entire amount of response costs—regardless of fault—unless it proves that the harm from the release of hazardous substances is divisible. See, *e.g.*, *Centerior Serv. Co.* v. *Acme Scrap Iron & Metal Corp.*, 153 F.3d 344, 348 (6th Cir. 1998); *United States* v. *Alcan Aluminum Corp.*, 990 F.2d 711, 721-722 (2d Cir. 1993); *United States* v. *Alcan Aluminum Corp.*, 964 F.2d 252, 268-269 (3d Cir. 1992); *United States* v. *Kayser-Roth Corp.*, 910 F.2d 24, 26-27 (1st Cir. 1990), cert. denied, 498 U.S. 1084 (1991); *United States* v. *Aceto Agric. Chems. Corp.*, 872 F.2d 1373, 1377 (8th Cir. 1989); *United States* v. *Monsanto Co.*, 858 F.2d 160, 167, 171-172 (4th Cir. 1988), cert. denied, 490 U.S. 1106 (1989). In analyzing divisibility of harm in Section 107(a) actions, courts have followed the Restatement (Second) of Torts (1965) (Restatement) Section 433A, which provides that damages may be apportioned where there are distinct harms or where there is a "reasonable basis for determining the contribution of each

cause to a single harm." See, *e.g.*, *Monsanto*, 858 F.2d at 171-173; *In re Bell Petroleum Servs.*, 3 F.3d 889, 895-897 (5th Cir. 1993); *United States* v. *Township of Brighton*, 153 F.3d 307, 318 (6th Cir. 1998); *United States* v. *Hercules, Inc.*, 247 F.3d 706, 717 (8th Cir.), cert. denied, 534 U.S. 1065 (2001).

Responsible parties facing joint and several liability may also file separate contribution actions, at which point equitable factors may be taken into account, to collect a portion of the costs from other responsible parties. See 42 U.S.C. 9613(f)(1).

2. In 1960, Brown & Bryant, Inc. (B&B) started operating an agricultural chemical storage and distribution business on a 3.8-acre parcel, which it initially leased and subsequently purchased (the B&B parcel). Pet. App. 12a. In 1975, B&B expanded its operations by leasing a 0.9-acre parcel owned by the Railroads that adjoined the B&B parcel to the west (the Railroad parcel). *Ibid.* The Railroad parcel, like the rest of the facility, was graded toward a drainage pond on the B&B parcel. *Ibid.* B&B ceased operating the facility in 1988 and is now insolvent. *Id.* at 129a.

Among the products stored and distributed at the facility were D-D and Nemagon, both manufactured by Shell, constituents of which are hazardous substances. Pet. App. 13a. During their transfer and storage, the chemicals routinely spilled and leaked onto both parcels. *Id.* at 13a-14a, 130a. Over the course of the facility's operation, hazardous substances entered the subsurface, creating a single plume of contaminated groundwater that threatened municipal drinking water supplies. *Id.* at 14a. The California and federal governments began to clean up the contamination at the facility pursuant to

their remediation authority under CERCLA. *Id.* at 14a-15a.

3. In 1996, the United States and the State filed suit under CERCLA Section 107(a) to recover their response costs, naming as defendants B&B, the Railroads, and Shell. In 2003, after a bench trial, the district court issued its Amended Findings of Fact and Conclusions of Law. Pet. App. 82a-262a.

a. The district court held that the governments had established a prima facie case of CERCLA liability. Pet. App. 163a-219a. The court determined that the entire site, encompassing both the B&B and Railroad parcels, constitutes a single "facility." *Id.* at 172a-173a. The court found that site operations released hazardous substances "from and located throughout the facility, particularly in the form of contaminated groundwater," and that the plume "poses an indivisible threat of leaching and diffusing contaminants to lower groundwater suitable for drinking." *Id.* at 172a; see *id.* at 174a.

The district court found that the Railroads were responsible parties as owners of the facility and as owners of the facility at the time of disposal, Section 107(a)(1)-(2), 42 U.S.C. 9607(a)(1)-(2). Pet. App. 176a-179a, 186a-187a. The court rejected the Railroads' third-party defense under CERCLA Section 107(b)(3), 42 U.S.C. 9607(b)(3), finding that the Railroads "periodically inspected B&B's plant and had actual knowledge" of B&B's operations, and that "B&B used the leased parcel to store chemicals where leaks would often occur." Pet. App. 184a-185a; see *id.* at 176a, 178a-179a. The court determined that the Railroads had "submitted no evidence that they took any action to prevent or mitigate their lessee's conduct on the Site, which ignored the hazards of continuous spills, releases and reckless prac-

tices in the unloading, storage, formulating and loading of toxic ag-chemicals." *Id.* at 185a. The court found that the Railroads had "failed to show that they acted with due care" or "took any precautionary actions against the foreseeable results of B&B's activities in storing and handling hazardous ag chemicals on the Railroad parcel." *Ibid.*

The district court held that Shell was liable pursuant to CERCLA Section 107(a)(3), 42 U.S.C. 9607(a)(3), as a party who had "arrange[d] for disposal" of hazardous substances. Pet. App. 204a, 208a-213a. The court determined that Shell "was an active participant in the D-D shipment, delivery and receiving process at Arvin with knowledge that spills and leaks of hazardous D-D were inherent and inevitable," and that such spills and leaks "occurred throughout the period Shell sold D-D to B&B." *Id.* at 204a. The court found that under the "Conditions of Sale," Shell had "determined and arranged for the means and methods of delivery of the D-D to the Arvin plant"; Shell had "hired common carrier delivery trucks to haul D-D to B&B's Arvin plant"; B&B was required to follow the Shell manual which provided "detailed loading and unloading procedures and specified the protective equipment employees had to wear"; Shell had "dictated" that B&B personnel unload the tanker truck; and over one period Shell had "required B&B to store highly corrosive D-D in bulk tanks, at a time when the distributors did not have the equipment or capital to deal with the corrosive D-D." *Id.* at 208a-209a. The court found that D-D spills "were expected and inherent in the delivery and unloading process that Shell arranged," and that "Shell understood this" and knew "that spillage of D-D onto the ground

posed a substantial threat of groundwater contamination." *Id.* at 209a.

b. The district court then addressed whether the Railroads and Shell should be held jointly and severally liable for the governments' response costs. The court recognized that joint and several liability generally applies in a CERCLA cost-recovery action. Pet. App. 232a. The court found that once liability is established, the burden "shifts to the defendant to demonstrate, by a preponderance of the evidence, that there exists a reasonable basis for divisibility." *Id.* at 235a.

The district court found that the harm at the site "is a single harm which consists of contaminated soil at various locations and depths around the Site and one mass (plume) of contaminated groundwater." Pet. App. 245a-246a. As to whether the evidence presented by the Railroads and Shell provided a reasonable basis for determining the contribution of each defendant to a single harm, the court found that:

> Apportionment in this case is exacerbated by defendants' "scorched earth," all-or-nothing approach to liability. Neither acknowledged an iota of responsibility, in the case of Shell, for causing "releases of hazardous substances["], and in the case of the Railroads, that any release of hazardous substance that required response occurred on [the] Railroad parcel throughout the 13 year lease terms. Neither party offered helpful arguments to apportion liability.

Id. at 236a. The court stated that the Railroads and Shell had "effectively abdicated providing any helpful arguments to the court," and that this had "left the court to independently perform the equitable apportionment analysis demanded by the circumstances of the case."

Id. at 236a-237a. The court further found that "no party has specifically documented the relative contributions of contamination from either parcel," *id.* at 248a, and that there is "no evidence to quantify the difference in volume of the releases" from the Railroad and B&B parcels, *id.* at 252a.

The district court nonetheless proceeded to make a divisibility determination based on its own assumptions. The court performed a three-part calculation for the Railroads' "equitable" apportionment. The court calculated the surface area of the Railroad parcel to be 19.1% of the total site surface area and the 13-year duration of the B&B-Railroad lease to be 45% of the site's total 29 years of operation. Pet. App. 247a. The court postulated (without explanation) that Nemagon and dinoseb, which were stored on the Railroad parcel, "contributed to 2/3 of overall Site contamination." *Id.* at 251a. The court then multiplied the three percentages, stating that "if 19% is multiplied by 0.45 (13 years of storage on Railroad parcel use/28 years of B&B operations) and multiplied by 2/3 (dinoseb and Nemagon contamination) the relative figure of 6% is reached." *Id.* at 252a. The court adjusted the Railroads' liability, "[a]llowing for calculation errors up to 50%," to nine percent of the total response costs. *Ibid.*

Similarly, with respect to Shell, the court acknowledged that "Shell did not present evidence how its products' contribution to the contamination at the Arvin facility can be apportioned." Pet. App. 252a. The court nonetheless estimated the amount of D-D spilled during "Shell controlled" deliveries and then the amount of D-D spilled for all other activities. *Id.* at 256a. Dividing the estimated volume spilled during Shell-controlled deliveries by the total estimated volume of D-D spills, the

court held Shell severally liable for 6% of the response costs. *Id.* at 256a-257a.[2]

4. The Ninth Circuit affirmed in part and reversed in part. Pet. App. 1a-57a.

a. The court of appeals affirmed the district court's ruling that Shell is a liable party under CERCLA as one who "arranged for disposal" of hazardous substances. Pet. App. 44a-55a. The court observed that "arranger" liability extends not only to direct arrangements for disposal of hazardous substances, but also to arrangements in which such disposal is a foreseeable byproduct of (but not the purpose of) the transaction. *Id.* at 48a-50a. The court also noted that CERCLA's definition of "disposal" includes the unintentional processes of "spilling" and "leaking." *Id.* at 50a-51a.

The court then recounted the evidence supporting "arranger" liability here:

> (1) Spills occurred *every time* the deliveries were made; (2) Shell arranged for delivery and chose the common carrier that transported its product to the Arvin site; (3) Shell changed its delivery process so as to require the use of large storage tanks, thus necessitating the transfer of large quantities of chemicals and causing leakage from corrosion of the large steel tanks; (4) Shell provided a rebate for improvements in B & B's bulk handling and safety facilities and required an inspection by a qualified engineer; (5) Shell regularly would reduce the purchase price

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[2] The district court made a $1.3 million adjustment to Shell's several liability because the governments had incurred response costs in connection with a "hot spot" at the site contaminated with dinoseb. Because dinoseb was not a Shell product, the court found the hot spot to be a separate harm for which Shell was not liable. Pet. App. 253a.

> of the D-D, in an amount the district court concluded was linked to loss from leakage; and (6) Shell distributed a manual and created a checklist of the manual requirements, to ensure that D-D tanks were being operated in accordance with Shell's safety instructions.

Pet. App. 53a-54a. The court held that the district court's findings "demonstrate that Shell had sufficient control over, and knowledge of, the transfer process to be considered an 'arranger,' within the meaning of CERCLA, for the disposal of the chemicals that leaked." *Id.* at 55a.[3]

b. The court of appeals reversed the district court's determination of divisibility and held petitioners jointly and severally liable. Pet. App. 19a-47a.

The court began by setting forth the legal standards for apportionment under CERCLA, expressly joining all other courts of appeals that have addressed the subject on three critical issues. First, the court explained that, while liability under CERCLA is generally joint and several, apportionment is available at the liability stage under appropriate circumstances. Pet. App. 19a-22a. Second, the court relied on the apportionment analysis of Restatement Section 433A, which provides that damages may be apportioned where there are distinct harms or where there is a "reasonable basis for determining the *contribution of each cause* to a single harm." Pet. App. 22a-26a (quoting Restatement § 433A). Third, the court held that equitable considerations are not appropriate for purposes of apportioning liability among responsible parties at the liability stage. *Id.* at 30a-34a.

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[3] The Railroads did not appeal the district court's finding that they were liable as responsible parties.

The court of appeals then turned to the applicable standard of review. It held that whether the harm at issue is theoretically capable of apportionment is a question of law reviewed de novo, but that whether the defendant submitted evidence sufficient to establish a reasonable basis for the apportionment as well as the district court's actual apportionment were questions subject to review for clear error only. Pet. App. 35a-36a. The court also held that the burden of proof is on the party seeking to apportion liability. *Id.* at 36a.

The court of appeals then applied those standards to this case. With respect to the Railroads, it held that the district court's apportionment calculation (based solely on percentage of land area, duration of ownership, and leakage volumes) lacked a reasonable basis in the record.[4] Pet. App. 37a-44a. The court concluded that "although most of the numbers the district court used were sufficiently exact, they bore insufficient logical connection to the pertinent question: What part of the contaminants found on the Arvin parcel were attributable to the presence of toxic substances or to activities on the Railroad parcel?" *Id.* at 43a.

With respect to Shell, the court of appeals held that the evidence produced at trial was insufficient to formulate even a rough approximation of Shell's proportional share of the site contamination. Pet. App. 44a-45a. The court found that the leakage evidence in the record did not provide a reasonable basis to sustain the district court's analysis because the site was contaminated with

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[4] The court of appeals also held that the district court had committed a basic factual error when it assigned a two-thirds fraction to represent the types of hazardous substances on the Railroad parcel because all three chemicals were on the Railroad parcel at some time. Pet. App. 42a.

a number of chemicals, and because Shell had failed to introduce any evidence from which a court could identify the percentage of the soil contamination that was attributable to its leaked chemicals.[5] *Ibid.* As the court put it, the record lacked that evidence "most likely because Shell put its eggs in the no-liability basket." *Id.* at 47a.

The court of appeals therefore held that the Railroads and Shell were jointly and severally liable for the harm at the site (except for the dinoseb hotspot, for which Shell was not liable, see note 2, *supra*). Pet. App. 56a-57a. The court of appeals denied rehearing en banc, over a dissenting opinion. *Id.* at 3a, 57a-81a.

ARGUMENT

The decision of the court of appeals is correct, does not conflict with any decision of this Court, and does not create a conflict among the courts of appeals. Nor is this case a proper vehicle for the Court to address any circuit conflict that may already exist. Accordingly, the Court's review is not warranted.

1. Shell argues (07-1607 Pet. 15-21) that it should not be liable under CERCLA at all because it did not "arrange for disposal" of a hazardous substance.[6] The court of appeals correctly affirmed the district court's contrary determination, and that fact-based determination does not warrant this Court's review.

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[5] The court of appeals also held that the district court's calculations even for the leakage of Shell chemicals at the site was far too speculative to provide a basis for apportioning liability. Pet. App. 45a-46a.

[6] The Railroads also urge (07-1601 Pet. 19) this Court to grant Shell's petition for a writ of certiorari as to Shell's "arranger" liability. In the court of appeals, however, the Railroads argued for *affirmance* of the district court's ruling that Shell is liable as an arranger. See Railroads Second C.A. Br. 16-38.

There is no bright-line rule for determining arranger liability. Rather, the relevant inquiry is whether the fact finder could infer from all the circumstances that a transaction involves an arrangement for the disposal or treatment of a hazardous substance. The courts of appeals are "virtually unanimous" that (1) determining arranger liability is a fact-intensive inquiry requiring consideration of all the circumstances, and (2) courts must look behind a defendant's characterization of the transaction to determine whether, in fact, the transaction involved an arrangement for disposal or treatment of a hazardous substance. *Morton Int'l, Inc.* v. *A.E. Staley Mfg. Co.*, 343 F.3d 669, 677 (3d Cir. 2003); see *Geraghty & Miller, Inc.* v. *Conoco Inc.*, 234 F.3d 917, 929 (5th Cir. 2000) (no bright-line test for determining when one is an "arranger"; court must examine "totality of the circumstances"), cert. denied, 533 U.S. 950 (2001); *Freeman* v. *Glaxo Wellcome, Inc.*, 189 F.3d 160, 164 (2d Cir. 1999) (courts have uniformly held that liability cannot be avoided by characterizing arrangement as a sale, and that arranger liability depends on the facts of each case); *Pneumo Abex Corp.* v. *High Point, Thomasville & Denton R.R.*, 142 F.3d 769, 775 (4th Cir.) (courts examine a number of factors to determine if a transaction was a sale or disposal for purposes of arranger liability), cert. denied, 525 U.S. 963 (1998); *United States* v. *Cello-Foil Prods., Inc.*, 100 F.3d 1227, 1231-1232 (6th Cir. 1996) (court must inquire into what actually transpired between the parties); *South Fla. Water Mgmt. Dist.* v. *Montalvo*, 84 F.3d 402, 407 (11th Cir. 1996) ("[w]hen determining whether a party has 'arranged for' the disposal of a hazardous substance, courts must focus on all of the facts in a particular case"); *Cadillac Fairview/Cal., Inc.* v. *United States*, 41 F.3d 562, 566 (9th

Cir. 1994) (courts will address on a case-by-case basis whether "in light of all the circumstances the transaction involved an arrangement for disposal or treatment of a hazardous waste"); *United States* v. *Aceto Agric. Chems. Corp.*, 872 F.2d 1373, 1381-1382 (8th Cir. 1989) ("courts have not hesitated to look beyond defendants' characterizations to determine whether a transaction in fact involves an arrangement for the disposal of a hazardous substance").

Shell does not dispute those propositions. Indeed, Shell acknowledges (07-1607 Pet. 20 n.2) that "arranger liability under 42 U.S.C. § 9607(a)(3) may extend beyond traditional 'direct arranger' liability for transactions entered into solely for the purpose of disposing of hazardous waste." Nor can Shell dispute that "disposal," as defined in CERCLA, includes the unintentional acts of spilling and leaking. See 42 U.S.C. 6903(3), 9601(29). Instead, Shell asserts (07-1607 Pet. 15) that the court of appeals' decision "for the first time" finds a chemical manufacturer liable as an arranger "merely" for shipping a useful product, by common carrier, to a purchaser that in turn allowed that product to leak or spill upon the ground after acquiring ownership and actual control. Shell's characterization of the record in this case belies the amount of involvement and control exercised by Shell, as well as Shell's knowledge of the disposals that were occurring at the facility when the chemicals were delivered by Shell's transporter.

As the court of appeals explained, Shell was "deeply involved" in the delivery process. Pet. App. 13a n.5. Shell contractually reserved the exclusive authority to, and in fact did, arrange for the delivery of hazardous D-D by common carrier tanker trucks to the facility. *Id.* at 124a. Shell owned the D-D at the time of such ar-

rangement. *Id.* at 211a. The common carriers were paid directly by Shell, participated in the transfer process, and used equipment required by Shell. Shell C.A. Supp. E.R. 113-114. At one point, Shell changed the delivery process so as to require the use of large storage tanks by purchasers, thus necessitating the transfer of hazardous substances and resulting in leakage from storage tanks. Pet. App. 53a, 114a-115a, 209a.

The record also is replete with evidence that spills of D-D were inherent and inevitable in the delivery process that Shell arranged, and that Shell was aware of that fact. Trial testimony established that spills of Shell D-D were an expected and routine part of the delivery process, especially during transfer of the product conducted by the Shell-hired drivers. Pet. App. 211a; Shell C.A. Supp. E.R. 9, 15-16, 113-116, 122-123. A Shell 1986 Marketing Agreement with B&B also recognized that spillage occurred during delivery of bulk liquid. That document stated in a section entitled "Shrinkage" that "[s]ingle and multiple destination deliveries by common carrier will be allowed 0.5 percent on a weight basis for shrinkage that may occur at time of unloading," and that the "shrinkage allowance will be deducted off the billing invoice." Gov't C.A. Supp. E.R. 962. In other words, "there was a monetary allowance to B&B for product Shell expected to be lost in the process of delivery and storage." Pet. App. 122a. As the district court held, D-D spills "were expected and inherent in the delivery and unloading process that Shell arranged," and "Shell understood this" and knew "that spillage of D-D onto

the ground posed a substantial threat of groundwater contamination." *Id.* at 209a.[7]

Those key facts—found by the district court and affirmed by the court of appeals—easily distinguish this case from the several cases cited by Shell (07-1607 Pet. 18-19) involving the mere sale of useful products, absent control or knowledge of disposal on the part of the manufacturer. Compare, *e.g.*, *Freeman*, 189 F.3d at 16 (no arranger liability because "[t]here is no evidence in the record before us to support an inference that the transaction at issue was anything more than a sale."), with *Aceto*, 872 F.2d at 1382 (denying arranger liability where disposals were inherent to the transaction "would allow defendants to simply 'close their eyes' to the method of disposal of their hazardous substances, a result contrary to the policies underlying CERCLA").

In *Amcast Industrial Corp.* v. *Detrex Corp.*, 2 F.3d 746, 751 (1993), cert. denied, 510 U.S. 1044 (1994), the case upon which Shell most heavily relies, the Seventh Circuit held that a manufacturer was not liable as an arranger for spills that occurred during a common carrier's delivery of hazardous substances to the customer. But there is no suggestion in that decision that the manufacturer exercised any control over those deliveries other than hiring the carrier, let alone the extent of control found to have been exercised by Shell here. Nor is

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[7] For the same reasons, the United States disagrees with the characterization of Shell's involvement at the facility set forth in the dissent from the denial of rehearing en banc in this case. The dissent's description is contrary to the findings of the district court, affirmed by the panel. As discussed, Shell was significantly more than a "mere seller" who "relinquished control over its products upon delivery and before spillage occurred." Pet. App. 61a. In any event, such a factual dispute does not warrant this Court's review.

there any suggestion that the manufacturer, like Shell, was aware that disposals (in the form of spills and leakage) of hazardous substances were occurring as a routine part of the carrier's delivery process. For example, unlike here, there is no indication that the manufacturer in *Amcast* arranged for a price reduction to account for the spillage of product that occurred during delivery. The degree of the manufacturer's control and knowledge of the delivery and disposal of hazardous substances, therefore, differ markedly between this case and *Amcast*.

Nor is this a situation where a manufacturer of a useful product is being held liable solely on the theory that there will have to be disposal at some later time, after the product has served its useful purpose. See *Florida Power & Light Co.* v. *Allis Chalmers Corp.*, 893 F.2d 1313, 1317 (11th Cir. 1990); *AM Int'l, Inc.* v. *International Forging Equip. Corp.*, 982 F.2d 989, 999 (6th Cir. 1993). As the court of appeals explained (Pet. App. 52a-53a), that line of cases is not implicated here, where the relevant disposal occurs *before* the use. In sum, all of the cases on which Shell relies for a supposed circuit conflict arise in very different factual scenarios. The court of appeals' decision here—premised on Shell's control over the deliveries and Shell's knowledge of disposals during those deliveries—is not inconsistent with those decisions, let alone in direct conflict.[8]

2. Petitioners contend (07-1601 Pet. 20-23, 26-30; 07-1607 Pet. 21-25) that the court of appeals applied agreed-upon principles too narrowly in finding no reasonable basis to apportion CERCLA liability on the

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[8] Shell's further assertion (07-1607 Pet. 19) of an intra-circuit conflict provides no basis for this Court's review. See *Wisniewski* v. *United States*, 353 U.S. 901, 902 (1957) (per curiam).

facts of this case. Petitioners' contention is in essence a request to revisit the court of appeals' factbound application of the same legal standard that petitioners would apply. Because the court of appeals' decision does not turn on any issue on which the circuits disagree, this Court's review is not warranted.

a. Crucially, petitioners do not dispute the correctness of the court of appeals' articulation of the substantive legal standards governing apportionment in the CERCLA context. First, consistent with all other courts of appeals to have addressed the issue, the Ninth Circuit stated that while liability under CERCLA is generally joint and several, apportionment is available at the liability stage under appropriate circumstances. Pet. App. 19a-22a. Second, consistent with all other courts of appeals to have addressed the issue, the Ninth Circuit stated that apportionment analysis starts with Section 433A of the Restatement, which provides that damages may be apportioned where "there are distinct harms" or "there is a reasonable basis for determining the contribution of each cause to a single harm." Pet. App. 22a-26a. Third, consistent with all other courts of appeals to have addressed the issue, the Ninth Circuit stated that equitable considerations—while relevant for contribution actions under 42 U.S.C. 9613(f)(1)—are not appropriate for purposes of apportioning liability among responsible parties. Pet. App. 30a-34a. Fourth, again consistent with all other courts of appeals to have addressed the issue, the Ninth Circuit stated that the responsible parties have the burden of proving a reasonable basis for divisibility. *Id.* at 36a.

Petitioners do not and cannot allege any circuit conflict on those legal questions, nor do they object to the court of appeals' articulation of those governing legal

principles. Instead, petitioners quibble principally with the court of appeals' *application* of those accepted legal standards to the facts of this case. Notably, the record below was significantly shaped by petitioners' own tactical choices. Rather than attempting to prove divisibility, petitioners' trial strategy was to argue that they were not liable at all. As a result, the district court was confronted with a situation where petitioners had failed to articulate, much less substantiate, any specific rationale for divisibility. See Pet. App. 236a ("Apportionment in this case is exacerbated by defendants' 'scorched earth,' all-or-nothing approach to liability. * * * Neither party offered helpful arguments to apportion liability."). On that record, the court of appeals narrowly and correctly held that petitioners had failed to provide a reasonable basis for divisibility and that the district court had clearly erred in finding otherwise. In any event, the court of appeals' fact-based determination does not warrant this Court's review.

b. In an effort to create the appearance that the Ninth Circuit's factbound decision conflicts with the decisions of other courts of appeals, petitioners speculate (07-1601 Pet. 26-30; 07-1607 Pet. 22-25) that other courts —though applying the same substantive legal standards applied by the Ninth Circuit here—would have found a reasonable basis to apportion liability based on the record in this case. Toward that end, petitioners argue (07-1601 Pet. 20-26) that the court of appeals incorrectly applied the Restatement's divisibility principles. Even if that were true, such misapplication would not warrant this Court's review. In any event, the court of appeals correctly applied Restatement principles to apportionment under CERCLA on the record before it.

Under Restatement Section 433A(1)(b), in relevant part, there must be "a reasonable basis for determining the contribution of each cause to a single harm." "[R]easonable basis" does not mean any basis a court can cobble together. There must be "sufficient *evidence* from which the court can determine the amount of harm caused by each defendant. If the *expert testimony and other evidence* establishes a factual basis for making a reasonable estimate that will fairly apportion liability, joint and several liability should not be imposed in the absence of exceptional circumstances." *In re Bell Petroleum*, 3 F.3d 889, 903 (5th Cir. 1993) (emphasis added); *United States* v. *Hercules, Inc.*, 247 F.3d 706, 718 (8th Cir.) ("Evidence supporting divisibility must be concrete and specific."), cert. denied, 534 U.S. 1065 (2001); *Chem-Nuclear Sys., Inc.* v. *Bush*, 292 F.3d at 254, 260 (D.C. Cir. 2002) (chain of possible inferences insufficient to carry liable party's burden). Here, the divisibility theory the district court invented lacked sufficient evidentiary support to establish it as a reasonable basis for determining the harm each petitioner caused.

That is not to say, as the court of appeals explicitly recognized (Pet. App. 24a n.18, 39a n.29), that volumetric, chronological, geographic, or other considerations can *never* establish divisibility. Those considerations, however, must be supported by evidence establishing them as a reasonable basis of apportionment, and the party claiming divisibility bears the burden of proving the basis for any apportionment. The Railroads might have submitted evidence at trial establishing that geographic area and time of ownership at the site was a reasonable basis for determining the amount of harm caused by the Railroads, but they did not. And Shell might have submitted evidence as to why the volumetric

ratio of leakage of *its* chemicals at the site was a reasonable basis for determining the relative amount of harm Shell caused, but it did not. Petitioners did not introduce evidence, through expert testimony or otherwise, to establish that divisibility based on area owned, period of ownership, or leakage volume was a reasonable basis for apportionment. Given that record, the court of appeals did not err. See *id.* at 47a, 236a.[9]

Petitioners (07-1601 Pet. 2-3) state that the court of appeals "acknowledged a direct conflict with the Fifth Circuit's decision in *Bell Petroleum Services*, 3 F.3d at 904 & n.19, which permits apportionment on the basis of reasonable assumptions even if records are 'incomplete,'

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[9] For similar reasons, petitioners' reliance (07-1601 Pet. 20-21; 07-1607 Pet. 22, 25) on the Restatement's cattle example is misplaced. In that example, where the cattle of two or more owners trespass on someone else's property and cause crop loss, the Restatement suggests that aggregate harm can be apportioned on the basis of the number of cattle owned by each and the assumption that the relative harm caused by each owner is proportionate to that number. Restatement § 433A cmt. d. That analogy is inapt given the greater complexities of the site and the harms at issue in this case. The causation analysis here involves considerably more variables (*e.g.*, multiple hazardous substances, pollution over time, different activities) than the cattle example, and, as noted above, petitioners did not proffer sufficient evidence as to the relative effect of those variables to justify the district court's blanket assumptions.

Even if the cattle example were relevant, it would not help petitioners. Petitioners' critical problem is that they never established how many cows each farmer had in the field or even what proportion of the cows were the Railroads' or Shell's. Petitioners at trial argued, in essence, that they had no cows at all. As the district court found, the Railroads presented "no evidence to quantify the difference in volume of the releases" on the B&B and Railroad parcels, and "Shell did not present evidence how its products' contribution to the contamination at the Arvin facility can be apportioned." Pet. App. 252a.

so long as a factual basis exists for a 'rough approximation' of each defendant's causal responsibility for the harm." Contrary to petitioners' assertion, the Ninth Circuit explicitly avoided that potential conflict by holding that, given the absence of a logical basis for the district court's inferences, its decision would be the same even under the Fifth Circuit's more forgiving standard. Pet. App. 46a n.32. For that reason, the court of appeals declined to express a view as to the level of specificity of proof needed to establish divisibility under CERCLA. *Ibid.* Indeed, the court of appeals elsewhere "emphasize[d] that [its] conclusion does not rest simply on the fact that the district court's calculation of the Railroads' share of liability was, as the court recognized, 'rough[].' It is neither unusual nor fatal to the validity of the resulting allocation that an apportionment determination includes estimates of contribution to contamination based on extrapolation of record facts, as long as the basis for the extrapolation is explained, is logical, and does not disregard other record facts." *Id.* at 38a n.28.[10]

Notably, petitioners do not cite a single case in which a court of appeals has affirmed apportionment of CERCLA liability under facts similar to those at issue here. Indeed, though discussed by the Ninth Circuit (Pet. App. 38a-39a), petitioners do not even mention *United States* v. *Rohm & Haas Co.*, 2 F.3d 1265 (3d Cir. 1993),

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[10] In any event, the assumptions at issue in *Bell Petroleum* were *assumptions by experts* in formulating their opinions that would then be used as evidence for divisibility. 3 F.3d at 904. Here, the assumptions were made by the district court without an evidentiary basis. Moreover, in *Bell Petroleum*, unlike here, only one hazardous substance (chromium) was involved, and the chromium entered the groundwater "as the result of similar operations by three parties who operated at mutually exclusive times." *Id.* at 903.

overruled on other grounds by *United States* v. *E.I. DuPont De Nemours & Co.*, 432 F.3d 161, 162-163 (3d Cir. 2005) (en banc)—the most factually analogous court of appeals decision to have addressed apportionment of CERCLA liability (and perhaps the only other one to have analyzed apportionment of *landowner* liability). In *Rohm & Haas Co.*, the Third Circuit held a responsible party that owned only 10% of the land area of the facility at issue to be jointly and severally liable. 2 F.3d at 1280-1281. In doing so, the Third Circuit rejected the party's request for apportionment based on its percentage of ownership, because "[t]he fact that [defendant] only owns a portion of the site says nothing about what portion of the harm may fairly be attributed to it." *Id.* at 1280. The Third Circuit also rejected apportionment based on temporal factors (namely, that most, if not all, of the waste was disposed of prior to its ownership), reasoning that the party "did not prove that none of the harm was attributable to it." *Ibid.* That the Ninth Circuit reached the same conclusion as the Third Circuit on similar facts further demonstrates the absence of any meaningful conflict.

c. Petitioners' last attempt (07-1601 Pet. 30-31) at identifying a circuit conflict relates to the standard of review applicable to a district court's divisibility determinations. In the Fifth and Eighth Circuits, whether the harm is capable of apportionment among two or more causes is a question of law reviewed de novo, while the actual apportionment of damages is a question of fact reviewed for clear error. *Hercules*, 247 F.3d at 718; *Bell Petroleum*, 3 F.3d at 896; Pet. App. 35a-36a; accord Restatement § 434 (functions of court and jury). The Sixth Circuit has stated simply that it will affirm a "district court's determination of indivisibility unless it is

clearly erroneous." *United States* v. *Township of Brighton*, 153 F.3d 307, 317-318 (1998).

As an initial matter, it is not clear that any circuit split exists in practice. Shell argued in the court of appeals that the Sixth Circuit applied "essentially the two step decision process described in the Restatement and applied in *Bell Petroleum*." Shell Second C.A. Br. 13 n.4 (citing *Township of Brighton*, 153 F.3d at 319-320).[11]

In any event, this case is not a proper vehicle to resolve any conflict that may exist. At most, the potential split as to the proper standard of review applies only to the threshold question of whether the harm is capable of apportionment. But the court of appeals in this case (applying de novo review) *agreed* with the district court that the harm here was capable of apportionment—a conclusion that petitioners endorse. See Pet. App. 36a-37a. And on the subsequent question of whether the record in this case provided a reasonable basis for the district court's apportionment, the court of appeals reviewed for clear error. *Ibid.* That is precisely the standard of review that petitioners now seek. 07-1601 Pet. 31. Accordingly, resolution of the alleged circuit conflict would not benefit petitioners. To be sure, petitioners disagree with the court of appeals' application of the clearly erroneous standard in this case, but, as explained above, that factbound issue does not warrant the Court's review.

d. Contrary to petitioners' contention (07-1601 Pet. 23-24), the court of appeals' decision does not evidence

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[11] Shell's argument below also suggests that it has waived the issue. Similarly, the Railroads asserted in the court of appeals that "[w]hether there is sufficient evidence to permit the trier of fact to apportion harm also is a question of law." Railroads First C.A. Br. 26 (citing Restatement § 434).

any undue bias in favor of joint and several liability under CERCLA. In particular, the Railroads complain (*id.* at 07-1601 Pet. 23) that they are being held liable for contamination not occurring on their land. But CERCLA Section 107(a)(1)-(2), 42 U.S.C. 9607(a)(1)-(2), makes the owner of a "facility" liable for the government's remediation costs, and here the district court found that the Railroad parcel and the B&B parcel constituted a single facility.[12] To be sure, the Railroads argued in the district court that the Railroad parcel should be considered its own facility separate from the B&B parcel. The district court rejected that contention, however, and the Railroads did not appeal on that issue. Pet. App. 165a-173a.

More broadly, the court's analysis is faithful to the language of CERCLA, Congress's purpose in enacting the statute, and relevant case law. CERCLA provides that the parties specified in 42 U.S.C. 9607(a) (subject to the statutory defenses) are strictly liable for "all" response costs incurred by the United States not inconsistent with the national contingency plan. "CERCLA's broad, remedial purpose is to facilitate the prompt cleanup of hazardous waste sites and to shift the cost of environmental response from the taxpayers to the parties who benefitted from the wastes that caused the harm." *OHM Remediation Servs.* v. *Evans Cooperage Co.*, 116 F.3d 1574, 1578 (5th Cir. 1997); see H.R. Rep. No. 253, 99th Cong., 1st Sess. Pt. 3, at 15 (1985) ("CERCLA has two goals: (1) to provide for clean-up if a hazardous substance is released into the environment or if

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[12] Congress defined "facility" in CERCLA to include "any site or area where a hazardous substance has been dep›sited, stored, disposed of, or placed, or otherwise come to be located." 42 U.S.C. 9601(9).

such release is threatened, and (2) to hold responsible parties liable for the costs of these clean-ups.").

Importantly, where a responsible party is held jointly and severally liable but believes it has paid more than its fair share, CERCLA provides recourse: that party can pursue a contribution action against other responsible parties to collect a portion of the costs. See 42 U.S.C. 9613(f). "In resolving contribution claims, the court may allocate response costs among liable parties using such equitable factors as the court determines are appropriate." *Ibid.* In contrast, as the court of appeals recognized—consistent with all other circuits to have addressed the issue but contrary to the district court's approach—equitable considerations should not be taken into account during apportionment at the liability stage. See Pet. App. 33a (citing *Hercules*, 247 F.3d at 718; *Township of Brighton*, 153 F.3d at 318; *Bell Petroleum*, 3 F.3d at 901; *Rohm & Haas Co.*, 2 F.3d at 1280-1281). While Section 9613(f) may not be an effective alternative in all situations, such as where the other responsible parties are insolvent, it reflects Congress's considered, compromise response to fairness concerns.

CONCLUSION

The petitions for a writ of certiorari should be denied.

Respectfully submitted.

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AUGUST 2008

REPLY BRIEF

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(6)

Supreme Court, U.S.
FILED
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No. 07-1601

In the Supreme Court of the United States

THE BURLINGTON NORTHERN AND SANTA FE RAILWAY COMPANY, and UNION PACIFIC RAILROAD COMPANY,

PETITIONERS,

v.

UNITED STATES OF AMERICA

AND

DEPARTMENT OF TOXIC SUBSTANCES CONTROL, STATE OF CALIFORNIA,

RESPONDENTS.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

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ARGUMENT

The opposition cannot and does not deny the basic reasons why certiorari is warranted. Respondent concedes that Congress *did not* intend to impose mandatory joint and several liability under the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. §9601 et seq., but instead contemplated apportionment under traditional common law principles. Respondent concedes that the circuits are divided both about the types of proof necessary for apportionment, and about the proper standard for appellate review. And respondent (like the Ninth Circuit) does not challenge the vast majority of the district court's extensive factual findings, which led that court to conclude that, even under conservative assumptions, contamination originating on the Railroad parcel could not account for more than 9% of the total harm. Yet the Government claims that it is perfectly fine to impose 100% of the liability on petitioners.

Respondent's argument basically consists of ignoring or misrepresenting the district court's detailed findings, and pretending that the Ninth Circuit articulated the correct legal standards because it cited the Restatement (Second) of Torts §433A (1965) ("Restatement"). But as the eight dissenters from denial of rehearing *en banc* explained, the panel "impose[d] impossible-to-satisfy burdens on CERCLA defendants" in the form of proof requirements that "effectively ... disregard" (at least for passive landowners) the Restatement principles that Congress intended to govern. Pet.App.-57a, 59a.

This case presents an ideal vehicle for this Court to resolve the circuit splits over CERCLA

apportionment, as well as the "arranger liability" issue.[1]

1. Respondent claims that the Ninth Circuit's errors involve the "factbound application of the same legal standards that petitioners would apply." Opp.-19. That is facile. The panel's opinion correctly articulates the governing principles only if one ignores most of its reasoning.

First, the Ninth Circuit established requirements for documentary proof that it openly acknowledged are nearly impossible to satisfy, and criticized the district court for relying on "simplistic" assumptions such as that causal responsibility is proportional to land area or time of operation. The Ninth Circuit demanded "records that separate out," with "precision," the toxic chemicals disposed on each parcel, even for "periods long in the past," and even from parties with no incentive to keep such records. *See* Pet.App.-40a–41a. That gloss on the "reasonable basis" standard utterly transforms the Restatement test, which explicitly contemplates apportionment of damage for trampled crops based on the number of escaped cows, and apportionment of harm to a polluted stream based on the time of operation. The Association of American Railroads' amicus brief highlights the ways in which the Ninth Circuit's apportionment standards are inconsistent with the common law's flexibility in accepting reasonable assumptions as a basis for divisibility. *See* AAR Amicus Br. at 4–13. The Ninth Circuit's proof requirements also far exceed what other circuits require. *See* Pet.-26–30. The Ninth Circuit

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[1] Respondent notes that the Railroads argued against Shell on the merits below, but that is not inconsistent with a belief that the issues it presents merit review.

even acknowledged the "circuit split on the degree of specificity of proof necessary to establish the amount of liability apportioned to each PRP," Pet.App.-46a n.32, although it asserted (unpersuasively) that petitioners would not have prevailed under more forgiving standards.

Second, the Ninth Circuit held that geographic divisibility was a "meat-axe' approach" because of "the synergistic use of different parts of the Arvin site." Pet.App.-40a–41a. Its point was that the non-polluting activities undertaken on the Railroad parcel allowed the facility operator to engage in a higher volume of polluting activities elsewhere. That reasoning articulates an unprecedented legal principle that will always defeat geographic apportionment and is plainly inconsistent with CERCLA's liability structure. *See, e.g., Gen. Elec. Co. v. AAMCO Transmissions, Inc.*, 962 F.2d 281, 287-88 (2d Cir. 1992) (lessor not responsible for his lessee's off-premises disposal of hazardous materials).

Finally, the Ninth Circuit's articulation of the governing standards openly reflects a strong bias against apportionment, motivated by the belief that it would "violate the basic structure of the CERCLA statutory scheme" for the government to be left "holding the bag" for cleanup costs. Pet.App.-11a, 33a-34a. But as the petition explained, and respondent essentially concedes, Congress was concerned not just with protecting the public fisc but also with the enormous potential for unfairness inherent in the strict and retroactive nature of CERCLA liability. Pet.-3–5. Congress deliberately chose *not* to put a thumb on the scales of the common law apportionment inquiry. *See, e.g., United States v. Chem-Dyne Corp.*, 572 F. Supp. 802, 808 (S.D. Ohio 1983).

2. Respondent's attempt to reconcile the Ninth Circuit's reasoning with the Restatement ignores or misrepresents the district court's extensive factual findings. *See generally* Pet.App.-82a–262a. Like the Ninth Circuit, respondent pretends that the district court engaged in a "simplistic" estimation of the Railroad's share of responsibility, based on land area and time, without an adequate factual foundation.[2] In fact the district court made more than a hundred pages of detailed findings, supported by extensive evidence, demonstrating that a geographic and temporal apportionment was almost certainly an *overstatement* of the Railroads' responsibility.

Respondent faults the Railroads for not putting on more evidence and argument specifically directed at apportionment. Opp.-20–21. This is a red herring. The district court did not find waiver and had no difficulty resolving the apportionment question and making the supporting findings. The simple reason is that the evidentiary basis of the Railroads' defense to liability—that the spills on the Railroad parcel were modest and did not contribute to the groundwater contamination—encompassed the same evidence that the district court needed for apportionment. The Railroads presented extensive evidence and argument relevant to the apportionment inquiry, including testimony that the volume of spills on the Railroad parcel was far lower, that any spills occurring there did not reach the

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[2] The district court also found that the Railroads were not responsible for one of the three chemicals. The Ninth Circuit held that was clearly erroneous, but clearly misunderstood the district court's finding. *See* Pet.-12, 22. Respondent repeats the Ninth Circuit's error (Opp.-12 n.4) but conspicuously fails to respond to the petition.

groundwater, and that the harm could be reasonably apportioned based on the relative mass of contaminants released on each parcel. *See* Brief of Appellees at 18-19 (9th Cir. filed Feb. 17, 2005) ("Railroads' Br."); Supplemental Excerpts of Record ("SER")-38–40, 211-12.

The district court held that there was "considerable evidence of the relative levels of activity and number of releases on the two parcels." Pet.App.-252a. It found that "[t]he contributions from spills and releases from the Railroad parcel are significantly less than from the B&B parcel, because the Railroad parcel was only used for vehicle and equipment storage, washing and limited loading-unloading of agricultural chemicals, not active operations or maintenance." Pet.App.-247. It found that B&B took "almost no precaution[s]" to prevent hazardous spills from 1960 to 1980, but that in 1979 it lined the sump and pond and began taking greater precautions. Pet.App.-130a, 111a. (B&B did not lease the Railroad parcel until 1975.) The district court also found that the spills on the Railroads' parcel were unlikely to reach the groundwater, due to site characteristics and the properties of the chemicals. *See* Pet.-10–11; Pet.App.-95a–103a. And it found that the government had not presented evidence as to how any spills on the Railroad parcel *could* reach the groundwater—at least not directly.[3] As a result, it determined that "[p]ast releases at the railroad parcel

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[3] Respondent describes "a single plume of contaminated groundwater," but the district court found that the modest groundwater contamination under the Railroad parcel (which did not require remediation) was likely caused by migration from contamination originating at the sump on B&B's parcel. Pet.App.-103a–04a.

could not have contributed to more than ten (10%) of the overall site contamination," Pet.App.-247a, and that the most the Railroads could possibly be allocated was 9% of the total harm, Pet.App.-252a.

Respondent (like the Ninth Circuit) does not contest those findings. Its position therefore must be that evidence supporting a conservative *over*estimation of the Railroads' causal responsibility cannot be a "reasonable basis" for estimating their share, and that because we do not have sufficient information to determine with precision exactly what percentage they should be allocated *below 9%* the Railroads therefore must be jointly and severally liable for 100%. That is perverse, and inconsistent with respondent's own concession that an apportionment can be based on a "rough approximation." Opp.-22–23.

3. Respondent argues that the Restatement's example apportioning harm for crops damaged by cattle is "misplaced" because "Petitioners did not introduce evidence, through expert testimony or otherwise, to establish that divisibility based on area owned, period of ownership, or leakage volume was a reasonable basis for apportionment." Opp.-22. Respondent contends, in particular, that the evidence here did not establish "how many cows each farmer had in the field." Opp.-22 n.9. Again, respondent's argument simply ignores the district court's extensive findings establishing, in effect, that the cows owned by the Railroads represented *at most* 9% of the cows loose in the overall field, did not even have access to 90% of the crops, and were less hungry and more listless than those owned by the facility operator B&B.

Respondent also describes the cattle example as "inapt" because "the causation analysis here involves considerably more variables (*e.g.* multiple hazardous

substances, pollution over time, different activities), than the cattle example." *Id.* Of course this case is more complicated than cows destroying crops. But as the dissent below explains, the Restatement contemplates division based on reasonable assumptions and does not require the precise documentation demanded by the Ninth Circuit panel. Since no one has ever claimed that the three hazardous substances at issue here interacted synergistically, this is not like *United States v. Monsanto Co.*, where "the commingling of hazardous substances" made apportionment impossible without information regarding "the interactive qualities of the substances deposited there." 858 F.2d 160, 172 (4th Cir. 1988), *cert. denied*, 490 U.S. 1106 (1989). And the Restatement expressly states that the same principles apply "where the pollution of a stream, or flooding, or smoke or dust or noise, from different sources, has interfered with the plaintiff's use or enjoyment of his land." Restatement §433A cmt. d.

4. The Ninth Circuit acknowledged "something of a circuit split" regarding the specificity of proof necessary to establish a reasonable basis for apportionment. Pet.App.-46a–47a n.32. Respondent points to the panel's statement that it "need not weigh in on this dispute, as the district court's extrapolations could not be upheld under even a forgiving standard." *Id.*; Opp.-23. As the dissent explained, however, that statement is simply disingenuous. The Ninth Circuit's demand for "records that separate out," with "precision," the volume of toxic chemicals disposed on each parcel, Pet.App.-40a–41a, is in direct conflict with the Fifth Circuit's holding in *In re Bell Petroleum Servs., Inc.* that "significant assumption factors" are permissible even if records have been lost, and that

"[e]vidence sufficient to permit a rough approximation is all that is required under the Restatement," 3 F.3d 889, 904 & n.19 (5th Cir. 1993). The evidence presented here provided, if anything, a *stronger* basis for divisibility than in *Bell*. Pet.-26–28. Respondent suggests that the assumptions in *Bell* were supported by experts, Opp.-23 n.10, but the district court here also relied on expert testimony. *See* Pet.App.-85a–112a. Respondent's contrary implication must be based on its observation that petitioners introduced that testimony primarily for the purpose of contesting liability rather than apportionment. But of course the testimony is relevant to both issues.

Respondent argues that *United States v. Rohm & Haas Co.*, 2 F.3d 1265 (3d Cir. 1993), is "the most factually analogous court of appeals decision to have addressed apportionment of CERCLA liability." Opp.-24. But in *Rohm & Haas*, the district court did not even address the issue of divisibility. *See* 2 F.3d at 1279–80; *United States v. Rohm & Haas Co.*, 790 F. Supp. 1255, 1264 (E.D. Pa. 1992). And the Third Circuit rejected divisibility based on land ownership because the defendant presented no evidence of "what portion of the harm may fairly be attributed to it." *Rohm & Haas*, 2 F.3d at 1280. By contrast, the district court here relied on extensive evidence of activities performed on each parcel, site characteristics, and chemical properties of the substances spilled. Respondent also incorrectly states that *Rohm & Haas* "rejected apportionment based on temporal factors." Opp.-24. The Third Circuit actually rejected the defendant's argument that it should not be liable for *any* of the harm because "'the contamination was caused solely by a third party.'" 2 F.3d at 1280 (citation omitted). The Third Circuit affirmed that the

defendant had simply failed to prove that case, as a factual matter. *Id.*

5. There is a square conflict over the appellate standard of review. The Ninth Circuit explained that "[t]hree circuits have addressed the question, and two separate approaches have emerged." Pet.App.-35a. It adopted a third approach that the dissent from denial of rehearing *en banc* accurately characterized as "sleight of hand." *See* Pet.App.-65a.

Respondent argues that the split is not presented because the Ninth Circuit agreed that the harm was capable of apportionment, and reviewed the rest of the apportionment decision for clear error. But the Ninth Circuit also held that "an aspect of clear error review is the legal determination whether the party with the burden of proof met that burden," Pet.App.-36a, effectively converting the entire apportionment inquiry into a question of law reviewed *de novo*. The court of appeals accepted virtually all of the district court's findings, yet ultimately held that "the party advocating apportionment has not come forward with the minimum showing needed to meet its burden of proof as to the proper division of liability" *as a matter of law*. *Id.* Contrary to respondent's suggestion (at 25), the Ninth Circuit's convoluted and disingenuous approach to the standard of review makes this the perfect case for this Court to resolve the conflict.

Respondent also argues that the Railroads waived the issue by failing to present it below. Opp.-25 n.11. But the Railroads argued for the standard applied in *United States v. Township of Brighton*, 153 F.3d 307, 318 (6th Cir. 1998). Railroads' Br. at 25. Although the opposition correctly quotes the Railroads as stating that "'[w]hether there is sufficient evidence to permit the trier of fact to apportion harm also is a question of

law,'" *see* Opp.-25 n.11, the Railroads explained in their brief that "[t]he party seeking apportionment has the burden of proof and is entitled to have the trier of fact decide the issue so long as there is *some evidence* permitting an apportionment." Railroads' Br. at 26-27 (emphasis added). But once that low "threshold is reached, whether damages can be divided by causation is a question of fact." *Id.* at 27. Just as before this Court, the Railroads thus argued below that the district court's apportionment decision is "reviewable under the clearly erroneous standard." *Id.* at 28.

6. Respondent has no real response to the petition's demonstration that the Ninth Circuit erred, and broke with at least the Eighth Circuit, by casting apportionment as a highly disfavored and unusual outcome that is somehow inconsistent with the policies underlying CERCLA. *See* Pet.-29. Respondent argues that the Ninth Circuit's reasoning "does not evidence any *undue* bias in favor of joint and several liability under CERCLA." Opp.-25–26 (emphasis added). But respondent embraces the radical and incorrect view that the purpose of CERCLA is to hold "potentially responsible parties" strictly liable for "all" response costs incurred by the United States (i.e., to ensure that the public never has to absorb "orphan shares"). Opp.-26. That position is clearly inconsistent with the text and legislative history of CERCLA, and with decisions of other circuits.

7. The opposition's argument (at 26-27) that the availability of contribution will mitigate the draconian burdens placed on CERCLA defendants by the Ninth Circuit is incorrect—as even respondent seems to acknowledge. The majority of CERCLA sites have a significant orphan share left by an insolvent defendant. *See* Pet.-35. The Ninth Circuit just believed it was

more appropriate to leave private parties "holding the bag" than the government, even if those private parties were simply landlords with no involvement in the contamination, much of which did not even occur on their land or during the time period their property was leased. Pet.App.-33a–34a.

The opposition wrongly asserts that the district court considered the equitable factors articulated in the "Gore amendment" in making its apportionment determination. *See* Opp.-8–9, 19, 27. The district court actually addressed these equitable factors *after* making its apportionment decision, when analyzing the issue of contribution and when it refused to apportion the orphan share left by B&B to the Railroads. *See* Pet.App.-233a–36a, 239a, 245a, 257a, 259a–60a. Petitioners do not contend that the "Gore" factors should be considered in making apportionment determinations. It is fair to point out, however, that there are equitable considerations underlying the Restatement test, and that the Ninth Circuit's break from that test produces results that are so inequitable as to be absurd. Even the Ninth Circuit acknowledged that its approach penalizes the parties with the least direct or moral responsibility for the contamination. Surely Congress did not want that.

8. Respondent has essentially no response to the arguments of the Railroads, Shell, and their *amici* that this case presents issues of national importance. As demonstrated by the Association of American Railroads, the Ninth Circuit's standard, in conjunction with CERCLA's expansive liability scheme, will impose crippling burdens on passive landowners. *See* AAR Amicus Br. at 13-20. CERCLA has been on the books for nearly thirty years, it imposes (at least) hundreds of billions of dollars in unprecedented

retroactive strict liability, and Congress explicitly left the most fundamental questions about apportionment of that liability to judicial development under common law principles. Yet this Court has never addressed the issue, despite substantial confusion and conflicts in the lower courts. The time is now.

CONCLUSION

The petition for certiorari should be granted.

Respectfully submitted,

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AMICUS CURIAE BRIEF

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No. 07-1601

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IN THE

Supreme Court of the United States

THE BURLINGTON NORTHERN AND SANTA FE RAILWAY COMPANY, and UNION PACIFIC RAILROAD COMPANY,
Petitioners,

v.

UNITED STATES OF AMERICA, and DEPARTMENT OF TOXIC SUBSTANCES CONTROL, STATE OF CALIFORNIA,
Respondents.

On Petition for a Writ of Certiorari to the United States Court of Appeals for the Ninth Circuit

BRIEF OF *AMICUS CURIAE* ASSOCIATION OF AMERICAN RAILROADS IN SUPPORT OF PETITIONERS

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July 25, 2008

WILSON-EPES PRINTING CO., INC. – (202) 789-0096 – WASHINGTON, D. C. 20002

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INTEREST OF *AMICUS CURIAE* ASSOCIATION OF AMERICAN RAILROADS[1]

The Association of American Railroads ("AAR") is an incorporated, non-profit trade association representing the nation's major freight railroads. AAR members operate approximately 72% of the rail industry's line-haul mileage, produce 95% of its freight revenues, and employ 92% of rail workers. Amtrak, which carries virtually all intercity rail passenger traffic, is a member of AAR, as are several commuter railroads. In matters of significant interest to its members, AAR frequently appears before Congress, the courts and administrative agencies on behalf of the railroad industry, including by participating as *amicus curiae* in cases that raise issues of vital concern to its membership and the judicial system.

This is such a case. The question presented, as the petition filed by BNSF Railway Company and Union Pacific Railroad Company amply demonstrates, is of surpassing concern to the proper administration of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9601 et seq., generally, and to the railroad industry specifically. For a variety of historical reasons, the Nation's railroads are large passive landowners. The decision below threatens to impose untold liability on such landowners that Congress neither foresaw nor

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[1] Pursuant to Supreme Court Rule 37.6, *amicus curiae* AAR states that no counsel for any party authored this brief in whole or in part and that no entity or person, aside from *amicus curiae*, its members, and its counsel, made any monetary contribution toward the preparation or submission of this brief. Pursuant to Supreme Court Rule 37.2, counsel of record for all parties received timely notice of *amicus curiae*'s intent to file this brief. The parties have consented to the filing of this brief and letters reflecting their consent have been filed with the Clerk of Court.

intended. The Ninth Circuit's decision will make apportionment easier to obtain for the truly culpable polluters but leave passive landowners jointly and severally liable for clean up costs that did not even occur on their own land. This issue implicates the proper allocation of endless billions of dollars of liability, and it presents an important question of federal law upon which the lower courts are divided and the court below radically departed from governing common-law principles.

INTRODUCTION

As Petitioners have thoroughly explained, the decision below richly merits this Court's review. It creates or exacerbates multiple conflicts over the proper interpretation of CERCLA, an important federal statute governing a nationwide cleanup program for which national uniformity is critical. *Amicus* AAR submits this brief to amplify two reasons why this Court should grant certiorari.

First, the decision below represents a marked departure from basic principles of liability apportionment. CERCLA has been interpreted to incorporate common-law principles in this critical area where Congress did not speak, and the common law favors apportionment in circumstances like these. Both the Second and Third Restatements of Torts provide for apportionment among causes when there is any "reasonable basis" to do so. This well-accepted test reflects a long tradition of permitting apportionment upon even rough approximations of comparative causation, and particularly where multiple pollutants or polluters are involved. The Restatements, indeed, highlight pollution and public nuisance as circumstances in which apportionment is especially appropriate, and numerous common-law decisions over the

past century and more have done likewise. The district court's well-reasoned and detailed apportionment analysis falls squarely within this common-law tradition, and the Ninth Circuit's decision to overturn it is a substantial misstep that this Court should reject.

Second, the Ninth Circuit's decision has great practical repercussions for landowners who have done everything that could reasonably be expected of them. Through CERCLA's combination of strict liability, modified causation and retroactive liability, the statute works harsh effects on passive landowners, who "may be required to pay huge amounts for damages to which their acts did not contribute." *U.S. EPA* v. *Sequa Corp. (In re Bell Petroleum Servs., Inc.)*, 3 F.3d 889, 897 (5th Cir. 1993). Railroads are particularly affected by this regime, because many of them possess large land holdings with unbroken fee title stretching back a century or more. As a result, CERCLA often imposes "liability ... upon [them] for conduct predating the enactment of CERCLA, ... even for conduct that was not illegal, unethical, or immoral at the time it occurred." *Id.* This case squarely presents the issue whether those already harsh effects should be multiplied by raising the bar for apportionment so high that joint and several liability is a near certainty. The Ninth Circuit begged this question, asserting that "the basic structure of the CERCLA statutory scheme," *United States* v. *Burlington N. & Santa Fe Ry.*, 520 F.3d 918, 941 (9th Cir. 2008), requires that landowners bear these costs in full. The statute says no such thing, as the Fifth Circuit and the dissenting judges below correctly recognized. The bald inequity that the Ninth Circuit's decision would countenance is further reason that this Court should grant the petition.

REASONS FOR GRANTING THE PETITION

I. THE DECISION BELOW IS AT ODDS WITH COMMON-LAW PRINCIPLES OF APPORTIONMENT.

A. CERCLA is silent on the proper method for apportioning damages among defendants, and so the lower courts generally have relied on "traditional and evolving common law principles," especially as reflected in the Restatements of Torts.[2] See *In re Bell Petroleum Servs., Inc.*, 3 F.3d at 895; *United States* v. *Alcan Aluminum Corp.*, 315 F.3d 179, 185 (2d Cir. 2003); *United States* v. *Chem-Dyne Corp.*, 572 F. Supp. 802, 810 (S.D. Ohio 1983). The common law broadly authorizes the apportionment of damages based upon causation. The familiar rule under the Second Restatement is that harm should be apportioned by cause when there is any "reasonable basis" to do so:

> Damages for harm *are to be apportioned* among two or more causes where
>
> (a) there are distinct harms, or
>
> (b) there is a *reasonable basis* for determining the contribution of each cause to a single harm.

Restatement (Second) of Torts § 433A(1) (1965) (emphases added). The Third Restatement employs the same rule, as do numerous standard authorities. See, *e.g.*, Restatement (Third) of Torts: Apportionment of Liability § 26(b) (2000) (damages to be divided by cause when there is a "reasonable basis" to do so); W. Page Keeton et al., *Prosser and Keeton on the Law of*

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[2] This Court has reserved the question whether CERCLA creates joint and several liability. *United States* v. *Atl. Research Corp.*, 127 S. Ct. 2331, 2339 n.7 (2007).

Torts § 52, at 346, 350 (5th ed. 1984) ("entire liability is imposed only where there is no factual basis for holding that one wrongdoer's conduct was not a cause in fact of part of the harm" and "emphasis is placed on the possibility of reasonable apportionment").[3] The rule embodies simple justice: "No party should be liable for harm it did not cause ...." Restatement (Third) of Torts § 26 cmt. a.

The three-judge panel below initially rejected even this modest and well-established requirement, reasoning that the Restatement principles are a "poor fit" because of the "'super-strict' nature of CERCLA." *United States* v. *Burlington N. & Santa Fe Ry.*, 502 F.3d 781, 792, 795 n.16 (9th Cir. 2007). In amending its opinion, the panel to be sure removed some of its most extreme language. 520 F.3d at 926-29. But the holding does clear violence to the Restatement's rule at every turn, *id.* at 936-38 & n.22, and is foreign to the common-law rule that other courts properly have adopted. *Never* have courts required the sort of "precision" in apportionment that the Ninth Circuit now demands, much less have they required the use of "records" to satisfy the burden of apportionment. *Id.* at 944. As the eight dissenters from denial of rehearing en banc properly put it, "The panel applies CERCLA in a novel and unprecedented way to impose impossible-to-satisfy burdens on CERCLA defendants." *Id.* at 952 (Bea, J., dissenting) (footnote omitted).[4]

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[3] *See also* Restatement (Second) of Torts § 881 cmt. a ("apportionment is made" for "harms ... that afford a reasonable basis for division").

[4] The first amended panel decision would have gone even further, requiring "*perfect information*" "that portions of the contamination are *in no respect traceable* to the portion of the facility that the landowner owned at the time of the disposal." 502 F.3d at 797, 801 (emphases added). Removing this offending

B. To apportion damages, it never has been essential that particular harms be capable of precise attribution to specific causes. Rather, it is well established that the proper question is whether "a factual basis can be found for some *rough practical apportionment*." Keeton et al., *supra*, § 52, at 345 (emphasis added); see also *id.* § 52, at 350 ("The difficulty of any complete and exact proof ... has not been regarded as sufficient justification for entire liability."). Both Restatements require only a "reasonable basis" for apportionment. Restatement (Second) of Torts § 433A(1); Restatement (Third) of Torts § 26(b). As the Third Restatement explains, "[a]s long as there is *some evidence* that would permit [apportionment], courts should permit the factfinder" to apportion damages. *Id.* § 26 rptrs' note cmt. h (emphasis added); *id.* § 26 cmt. f ("The fact that the magnitude of each indivisible component cannot be determined with precision does not mean that the damages are indivisible. All that is required is a reasonable basis for dividing the damages.").

In conflict with the decision below, the Fifth Circuit properly adopted this common-law approach in *In re Bell Petroleum Services, Inc.*, a case arising under CERCLA:

> If the expert testimony and other evidence establishes a factual basis for making a reasonable estimate that will fairly apportion liability, joint and several liability should not be imposed in the absence of exceptional circumstances. The fact that apportionment may be difficult, because each defendant's exact contribution to the harm

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language makes the opinion less inflammatory, but it does nothing to protect the legitimate interests of passive landowners who cannot remotely satisfy the requirements for apportionment imposed here.

> cannot be proved to an absolute certainty, or the fact that it will require weighing the evidence and making credibility determinations, are inadequate grounds upon which to impose joint and several liability.

In re Bell Petroleum Servs., Inc., 3 F.3d at 903.

These authorities reflect a long tradition in which courts have permitted apportionment based on approximations of relative causation. Presented with "evidence which reasonably tends to show the relative proportion" of the tortfeasors' causal responsibility, *Eckman* v. *Lehigh & Wilkes-Barre Coal Co.*, 50 Pa. Super. 427, 432 (1911), courts would "permit the jury, as reasonable men, to make from the evidence the best possible estimate," *Hill* v. *Chappel Bros. of Mont., Inc.*, 18 P.2d 1106, 1110 (Mont. 1932). As early as 1879, the Connecticut Supreme Court expressed a strong preference for apportionment – even rough apportionment – as more appropriate than the alternative:

> It may be very difficult for a jury to determine just how much damage the defendant is liable for and how much should be left for the city to answer for; but this is no more difficult of ascertainment than many questions which juries are called upon to decide. They must use their best judgment, and make their result, if not an absolutely accurate one, an approximation to accuracy.... If the plaintiff is entitled to damages and the defendant liable for them, the one is not to be denied all damages, nor the other loaded with damages to which he is not legally liable, simply because the exact ascertainment of the proper amount is a matter of practical difficulty.

Sellick v. *Hall*, 47 Conn. 260, 274 (1879).[5]

Indeed, far from imposing rigid proof requirements like the specific historical records that the Ninth Circuit demanded here, 520 F.3d at 944, courts often have "relaxed the quality and quantity of evidence required to meet the burden of production." Restatement (Third) of Torts § 26 rptrs' note cmt. h. As Prosser explained in his seminal article:

> The difficulty of assessing separate damages ... is not regarded as sufficient justification for entire liability....
>
> ... It has been said that no very exact proof will be required, and that general evidence as to the proportion in which the defendants contributed to the result will be sufficient to support separate verdicts.

W. Prosser, *Joint Torts and Several Liability*, 25 Cal. L. Rev. 413, 438-39 (1937).[6]

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[5] *Accord Harley* v. *Merrill Brick Co.*, 48 N.W. 1000, 1002 (Iowa 1891) ("the fact that it is difficult to measure accurately the damage which was caused by the wrongful act of each contributor to the aggregate result does not . . . make any one liable for the acts of others"); *Chipman* v. *Palmer*, 77 N.Y. 51, 53-54 (1879).

[6] *See also* W. Prosser, *Handbook of the Law of Torts* § 47, at 328, 334-35 (1st ed. 1941) (whenever "a logical basis [could] be found for some rough practical apportionment, which limits a defendant's liability to that part of the harm which he has in fact caused, it [could] be expected that the division [would] be made"); *Ogden* v. *Lucas*, 48 Ill. 492, 494 (1868); *Cal. Orange Co.* v. *Riverside Portland Cement Co.*, 195 P. 694, 695 (Cal. Ct. App. 1920) ("[t]hough in cases of this sort entire accuracy is impossible, and the difficulty of accurately proportioning and assessing the damage done by defendant's mill is great" "the trial court was at liberty to estimate as best it could, from the evidence before it, how much of the total damage caused by the operations

The district court in the decision below went far beyond the "rough practical apportionment" or "best possible estimate" that common-law courts routinely have approved. It held a bench trial that stretched over multiple weeks, after which it entertained multiple motions to amend its findings of fact and conclusions of law. See *United States* v. *Atchison, Topeka & Santa Fe Ry.*, Nos. CV-F-92-5068 OWW, CV-F-96-6226, -6228 OWW, 2003 WL 25518047, at *1 (E.D. Cal. July 15, 2003). It ultimately issued a lengthy order that contained nearly 300 individual findings of fact, *id.* at *2-43, and engaged in a detailed apportionment analysis, in the course of which it evaluated the relative contributions of the various parcels of land, *id.* at *80-96; see Pet. 21-22. If this is a "'meat-axe'" approach, 520 F.3d at 944, the common law has been a butcher for more than a century.

C. To be sure, the Ninth Circuit observed that "estimates" may be an adequate basis for apportionment. *Id.* at 943 n.28. But that comment cannot disguise the intolerable fact that now, in the Ninth Circuit, apportionment based on the factors articulated by the district court is unavailable *as a matter of law*. See *id.* at 943 (the district court's "*legal conclusion* that these three factors alone suffice to support apportionment cannot stand" (emphasis added)). This conclusion, too, flies in the face of the numerous authorities that long have recognized that environmental torts (and earlier, so-called "public nuisances") are particularly susceptible of apportionment. See, *e.g.*, G. Boston, *Apportionment of Harm in Tort Law: A Proposed Restatement*, 21 U. Dayton L. Rev. 267, 301 (1996) ("[P]rinciples of comparative

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of the two cement companies was occasioned by defendant's plant, and in doing so might measure with a liberal hand the amount of damage caused by defendant's mill").

causation are especially relevant in the toxic torts area, where measures of toxicity can be applied to determine apportionment."). So, for instance, Prosser explains that

> [n]uisance cases, in particular, have tended to result in apportionment of the damages, largely because the interference with the plaintiff's use of land has tended to be severable in terms of quantity, percentage, or degree. Thus defendants who independently pollute the same stream, or who flood the plaintiff's land from separate sources, are liable only severally for the damages individually caused, and the same is true as to nuisances due to noise, or pollution of the air.

Keeton et al., *supra*, § 52, at 349 (footnotes omitted; citing numerous cases); Restatement (Second) of Torts § 433A cmts. c, d, illus. 5; *id.* § 881 cmt c., illus. 1, 2.[7]

And, indeed, other courts in applying these common-law principles in the precise context of CERCLA have not set the bar nearly so high as the Ninth Circuit as to what constitutes a "reasonable basis" for apportionment. The Sixth Circuit, for instance, has held that courts "should be receptive to any argument for divisibility that provides a reasonable basis" for apportioning harm. *United States* v. *Twp. of Brigh-*

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[7] Apportionment therefore repeatedly was employed in cases closely analogous to this one, in which pollution by multiple tortfeasors harmed a plaintiff's person or property. *E.g.*, *Ralston* v. *United Verde Copper Co.*, 37 F.2d 180, 184 (D. Ariz. 1929), *aff'd*, 46 F.2d 1 (9th Cir. 1931); *Thomas* v. *Ohio Coal Co.*, 199 Ill. App. 50, 56-57 (1916); *see also Woodland* v. *Portneuf Marsh Valley Irrigation Co.*, 146 P. 1106, 1106-07 (Idaho 1915); *Harley*, 48 N.W. at 1001-02.

ton, 153 F.3d 307, 320 (6th Cir. 1998). In line with the common-law authorities – and far from employing the impossibly exacting burden of proof required by the Ninth Circuit – the Fifth Circuit has authorized apportionment on the basis of "a reasonable estimate."[8] *In re Bell Petroleum Servs., Inc.*, 3 F.3d at 903.[9] But compare *United States* v. *Hercules, Inc.*, 247 F.3d 706, 718 (8th Cir. 2001); *United States* v. *Alcan Aluminum Corp.*, 964 F.2d 252, 269 (3d Cir. 1992) (burden to prove divisibility is "substantial").

What is more, apportionment has been performed using precisely the factors that the court below rejected here as a matter of law. The Ninth Circuit held that a "simple fraction based on the time that the Railroads owned the land cannot be a basis for apportionment." 520 F.3d at 945. Time, however, long has been recognized as an appropriate basis for apportioning pollution-based harms:

> The harm inflicted may be conveniently severable in point of time. Thus if two defendants, independently operating the same plant, pollute a stream over successive periods, it is clear that each has caused a separate amount of harm, lim-

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[8] The Ninth Circuit's imposition of arranger liability on Shell under 42 U.S.C. § 9607(a)(3) for the sale and shipment of commercially useful products to the operator, 520 F.3d at 948-52, also stands in conflict with other circuits that recognize that the sale of a useful product is not a basis for imposing arranger liability. *See generally* Shell Oil Co. Pet. for Writ of Certiorari, No. 07-1607. Accordingly, the Court should also grant the petition in 07-1607.

[9] *See also Dent* v. *Beazer Materials & Servs., Inc.*, 993 F. Supp. 923, 946 (D.S.C. 1995) (apportioning CERCLA damages among former owners by distinguishing types of hazardous products and applying causal analysis), *aff'd*, 156 F.3d 523, 530-31 (4th Cir. 1998).

> ited in time, and that neither has any responsibility for the harm caused by the other.

Restatement (Second) of Torts § 433A cmt. c; Prosser, 25 Cal. L. Rev. at 434-45 (same; "[i]n such cases there is available a logical basis for the apportionment of the loss").[10]

In *In re Bell Petroleum Services, Inc.*, for instance, the Fifth Circuit permitted CERCLA apportionment based on a combination of periods of ownership and evidence about what occurred during those periods. 3 F.3d at 903-04. The Sixth Circuit did likewise in *Township of Brighton*. See 153 F.3d at 320 ("if [defendant] can show that it was only an operator after a particular year, and that only a certain percentage of the hazardous material was introduced into the property after that year, it can show divisibility and be held liable only for the releases occurring after it became an operator"); see also *Hercules*, 247 F.3d at 719 (chronological evidence can prove divisibility of harm). That is closely analogous to what the district court did here. See Pet. 21.

Geography likewise supplies a reasonable basis for apportionment of CERCLA liability. Whereas the Ninth Circuit rejected the use of this factor, see 520 F.3d at 943-44, other circuits have held to the contrary. See *Twp. of Brighton*, 153 F.3d at 320 (if an entity can show that its "activities were completely limited to a discrete and measurable section of the property, and that the releases onto or from that section represented a discrete and measurable harm, this would provide a reasonable basis for apportionment"); see *United States* v. *Burlington N. R.R. Co.*, 200 F.3d 679, 700 (10th Cir. 1999) (affirming decision

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[10] *Accord* Restatement (Third) of Torts § 26 rptr's note cmt. f.

dividing credit for a settlement agreement that apportioned liability based on geography).[11]

II. THE NINTH CIRCUIT'S UNYIELDING APPLICATION OF JOINT AND SEVERAL LIABILITY WILL HAVE EXTRAORDINARY AND INEQUITABLE EFFECTS.

The Ninth Circuit's "unreasonable" analysis of CERCLA, 520 F.3d at 953 (Bea, J., dissenting), additionally merits review because it has significant consequences for a category of defendants who already face exceptionally broad liability under the statute: landowners, including passive landowners who have in no way contributed to the need for cleanup. The decision below would multiply those harsh effects, in a way that "Congress did not ... intend." *Id.* Railroads will be particularly adversely affected by any such rule, due to the substantial landholdings that many of them have possessed since the time of the Industrial Revolution.

A. Any discussion of CERCLA liability must begin with the broad ways in which the statute imposes liability. First, liability is effectively strict. It affects four classes of parties including, relevant here, the current owner or operator of the facility, and one who owned or operated the facility "at the time of disposal of any hazardous substance." 42 U.S.C. § 9607(a)(1), (2).[12] Parties who fall into these classes are com-

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[11] *See also Kamb* v. *U.S. Coast Guard*, 869 F. Supp. 793, 799 (N.D. Cal. 1994) (apportioning based on geography and volume of contaminant).

[12] In addition, liability is imposed upon any person that arranged to dispose of its hazardous substances at the facility, and any transporter who delivered hazardous substances to the facility. 42 U.S.C. § 9607(a)(3), (4).

monly referred to as "potentially responsible parties," or "PRPs." The defenses available to PRPs are almost nonexistent – they are limited to showing that the disposal from the facility was caused *solely* by an act of God, an act of war, or the act of a third party with whom the PRP had no direct or indirect contractual relationship. *Id.* § 9607(b). As a result – and while the statute never uses the actual words – courts have held that CERCLA imposes strict liability. See, *e.g.*, *United States* v. *Atl. Research Corp.*, 127 S. Ct. 2331, 2336 (2007); *Alcan Aluminum Corp.*, 315 F.3d at 184; *In re Bell Petroleum Servs., Inc.*, 3 F.3d at 897. At its most fundamental level, this means that the government need not establish that the PRP's acts *caused* the disposal, and common-law defenses such as the exercise of due care are to no avail.

Piling on to this harsh scheme, CERCLA has been interpreted as employing a greatly relaxed causation standard. Courts have held that a CERCLA plaintiff need not "establish a specific causal connection between [the] defendant's hazardous substances and the release or the plaintiff's incurrence of response

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Relevant to railroads, a transporter is liable only if it affirmatively selected the facility. *Id.* § 9607(a)(4). This stands as Congress's recognition of the unique commercial relationships between railroads and their customers. Even under a regime based on strict liability, *see infra*, it would be inappropriate to impose liability on a common carrier that does not select the receiving facility, but rather is bound by its customers' delivery instructions. *See Tippins, Inc.* v. *USX Corp.*, 37 F.3d 87, 95 (3d Cir. 1994). The Ninth Circuit's expansive approach, however, undermines this exclusion from liability. The railroads' lessees are commonly their customers as well, leasing property along rail lines to facilitate shipping. Section 9607(a)(4) exempts railroads from liability for their shippers' acts of disposal; the Ninth Circuit's rule expands the railroads' liability for those same acts.

costs." *Alcan Aluminum Corp.*, 964 F.2d at 264; see also *Amoco Oil Co.* v. *Borden, Inc.*, 889 F.2d 664, 670 n.8 (5th Cir. 1989) ("a plaintiff need not prove a specific causal link between costs incurred and an individual generator's waste"). Furthermore, courts have concluded that CERCLA liability is retroactive – *i.e.*, that a PRP is responsible for cleanup costs stemming from conduct that predates enactment of the law in 1980. *Alcan Aluminum Corp.*, 315 F.3d at 188 (collecting cases).

The weight of this liability regime sits heaviest on the shoulders of the landowner. Unlike the categories of PRPs in (a)(3) and (a)(4), for instance, who may have had *some* role in disposal of the waste, the owner may be liable for wholly passive conduct – *i.e.*, doing nothing more than owning land that someone once polluted. The government's proof is reduced to the simple question of fee ownership, and absent any reasonable form of apportionment, the owner is left "holding the bag." 520 F.3d at 941.

B. These aspects of CERCLA liability fall with special force on railroads, which are quintessential passive landowners. Due in large measure to the land-based nature of their business, railroads possess substantial landholdings, much of which follows the 140,000 or more miles of right-of-way railroad track throughout the country. In the mid-19th Century, for instance, certain railroads (including predecessors to the petitioners here) received land grants from the federal government (in exchange for discounted hauling of federal freight, among other things) in order to facilitate national economic development. See generally *Leo Sheep Co.* v. *United States*, 440 U.S. 668, 670-77 (1979). These landholdings – many of which took the form of checkerboard parcels of land – are broadly geographically dispersed. See *id.* at 672.

The railroads often are – and they historically have been – passive landowners with regard to many of these parcels. In short, the railroads have thousands of lessees. AAR's members collectively have more than 75,000 land leases. One member railroad alone has 7800 land leases in 28 states, with (largely incomplete) records of an additional 28,000 known historical leases. Another member has more than 23,000 land leases, the majority of which are smaller than one acre. What is more, because much of this property is in proximity to rail lines, the railroads' lessees are often commercial and industrial concerns that require access to these transportation facilities.

For railroads, therefore, all of the harshest elements of CERCLA liability line up against them. They are fee owners of thousands of pieces of commercial and industrial property, with title stretching back decades and beyond. (The railroad land grants, for instance, took place between 1850 and 1871.) The odds that one of those tenants spilled or disposed of hazardous substances is high, as is the possibility that the offending tenant is no longer in existence. Under the holding below, then, the railroads are not just left "holding the bag"; they are left holding a ticking time bomb of potentially massive liability. Review by this Court is critical to avoid this sweeping and unjust result.

C. For all of these reasons, the evidentiary requirements imposed by the decision below, which find no support in the common law and conflict with the decisions of other courts of appeals, threaten to work extraordinary effects on railroads and other landowners like them. The extreme proofs now required by the Ninth Circuit effectively guarantee that liability will be joint and several, including in circumstances when – as discussed above – the common law rou-

tinely prefers apportionment. The Ninth Circuit demanded evidence of "the proportion of the amount of chemicals stored, poured from one container to another, or spilled on each parcel." 520 F.3d at 944. For instance, the court sought "adequate records" by which "to estimate the amount of leakage attributable to activities on the Railroad parcel, how that leakage traveled to and contaminated the soil and groundwater under the Arvin parcel, and the cost of cleaning up that contamination." *Id.*

It comes as no surprise that "none of this data is in the record," *id.*, because such data rarely exists. The panel recognized as much, conceding that "[i]t may well be that such information is, as a practical matter, not available for periods long in the past, when future environmental cleanup was not contemplated." *Id.* The same is true for more recent records as well, because typical commercial leases do not require tenants to retain and disclose the detailed records that the Ninth Circuit now demands, much less do they require this for *adjacent* properties. And therein lies the problem. The passive landowner is the *least* likely party to have access to any such detailed records that – if they ever were kept at all – belonged to the site operator. Of course, it is implausible to think that many (if any) commercial enterprises kept detailed records of spills or leaks in the years before modern environmental regulations required such information. And it is unthinkable that the lessor would have done so.

Compounding the harm embodied in its core ruling embracing inflexible joint and several liability, the Ninth Circuit imposed special additional requirements on landowners. It held that whereas Restatement principles "work[] nicely" when "several defendants are all polluters themselves," a landowner can

only "establish divisibility by demonstrating a reasonable basis for concluding that a certain proportion of the contamination did not originate on the portion of the facility that the landowner owned at the time of the disposal." *Id.* at 937, 938. This inverts logic; it would place the greatest burden on the least culpable party, who also is the least likely to possess or control the information that the court now would demand.

The practical result of this is that joint and several liability is a near certainty. Accordingly, any "orphan shares" attributable to defunct parties will become the responsibility of the remaining viable PRPs. In a case like this one, the railroad, whose only act was to lease its land, ends up jointly responsible for all cleanup costs, picking up the shares not only of former tenants that actually *caused* the problem, but of all nearby landowners whose land constituted part of the same facility onto which a disposal occurred.[13]

And this, of course, is precisely what the Ninth Circuit intended. The panel was absolutely clear that any "perceived unfairness" in "hold[ing] a partial

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[13] The opportunity to seek contribution from other PRPs – held out by the Ninth Circuit as a means to blunt these inequities, 520 F.3d at 940-41, 945 – provides small comfort in these situations. Contribution allocates liability among viable PRPs. But when the landowner is one of the few (or only) viable PRPs, it takes on the orphan shares of defunct, culpable parties.

In fact, the government's practice of picking the easy targets further compounds the inequities. *See* Kathleen Segerson, Reason Found., Policy Study No. 187, *Redesigning CERCLA Liabilty: An Analysis of the Issues* § VI.B.1 (Apr. 1995), *available at* http://www.reason.org/ps187.html (government targets certain PRPs for expediency, particularly based on their ability to pay). Empowered by joint and several liability, the U.S. can sue the landowner and others whose liability is easily proved, shifting to those defendants the burden of prosecuting contribution actions against the tough cases.

owner liable for all of the contamination cleanup costs" is justified by "CERCLA's expansive statutory liability scheme." *Id.* at 940-41. According to the panel, "[a]ny court-created structure that would allow PRPs to whittle their share to little or nothing and leave the taxpayers holding the bag may seem more equitable to some PRPs but would violate the basic structure of the CERCLA statutory scheme." *Id.* at 941. This passage lays bare the panel's hostility to the Restatement principles that it purports to adopt. There is, however, nothing in CERCLA to support this curious notion that because the statute's liability regime is "expansive" in some regards, it is without limitation in all other respects. As the dissenters below explained, Congress did *not* make the statute expansive *in this regard*; it did not speak to this issue at all. *Id.* at 957 n.12 (Bea, J., dissenting). And this is precisely why the Fifth Circuit explained – in clear conflict with the Ninth Circuit's approach – that Congress's silence "left it to the courts to fashion some rules that will, in appropriate instances, ameliorate this harshness." *In re Bell Petroleum Servs., Inc.*, 3 F.3d at 897. What is clear is that an identical site in New Orleans would not subject a railroad to the liability imposed on the railroads here simply because they do business within the states encompassed by the Ninth Circuit.

An appropriate division of harm among PRPs provides some measure of proportionality for the passive landowner. Apportionment will not, in the normal situation, exculpate a PRP entirely, but for the landowner it holds out the possibility that its final responsibility will in some measure reflect its relationship to the site. The decision below, however, departs from common-law principles, imposes an unyielding form of liability that Congress never wrote into the

statute, and would impose untold liability where it is entirely unwarranted.

CONCLUSION

For the foregoing reasons, the petition for a writ of certiorari should be granted.

Respectfully submitted,

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(2) (3)

Nos. 07-1607, 07-1601

FILED
JUL 25 2008
OFFICE OF THE CLERK
SUPREME COURT, U.S.

IN THE

Supreme Court of the United States

SHELL OIL COMPANY,

Petitioner,

v.

UNITED STATES OF AMERICA; DEPARTMENT OF TOXIC SUBSTANCES CONTROL, STATE OF CALIFORNIA,

Respondents.

THE BURLINGTON NORTHERN AND SANTA FE RAILWAY COMPANY, AND UNION PACIFIC RAILROAD COMPANY,

Petitioners,

v.

UNITED STATES OF AMERICA AND DEPARTMENT OF TOXIC SUBSTANCES CONTROL, STATE OF CALIFORNIA,

Respondents.

On Petition for a Writ of Certiorari to the United States Court of Appeals for the Ninth Circuit

BRIEF OF *AMICI CURIAE* CHAMBER OF COMMERCE OF THE UNITED STATES, AMERICAN CHEMISTRY COUNCIL, AMERICAN PETROLEUM INSTITUTE, CROPLIFE AMERICA, NATIONAL ASSOCIATION OF MANUFACTURERS, AND NATIONAL PETROCHEMICAL AND REFINERS ASSOCIATION IN SUPPORT OF PETITIONER

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MISCELLANEOUS

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IN THE

Supreme Court of the United States

NOS. 07-1607, 07-1601

SHELL OIL COMPANY,

Petitioner,

v.

UNITED STATES OF AMERICA; DEPARTMENT OF TOXIC SUBSTANCES CONTROL, STATE OF CALIFORNIA,

Respondents.

THE BURLINGTON NORTHERN AND SANTA FE RAILWAY COMPANY, AND UNION PACIFIC RAILROAD COMPANY,

Petitioners,

v.

UNITED STATES OF AMERICA AND DEPARTMENT OF TOXIC SUBSTANCES CONTROL, STATE OF CALIFORNIA,

Respondents.

On Petition for a Writ of Certiorari to the United States Court of Appeals for the Ninth Circuit

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BRIEF OF *AMICI CURIAE* CHAMBER OF COMMERCE OF THE UNITED STATES, AMERICAN CHEMISTRY COUNCIL, AMERICAN PETROLEUM INSTITUTE, CROPLIFE AMERICA, NATIONAL ASSOCIATION OF MANUFACTURERS, AND NATIONAL PETROCHEMICAL AND REFINERS ASSOCIATION IN SUPPORT OF PETITIONER

INTEREST OF *AMICI CURIAE*

The Chamber of Commerce of the United States of America ("the Chamber") is the world's largest business federation, representing an underlying membership of more than 3,000,000 businesses and organizations of all sizes. Chamber members operate in every sector of the economy and transact business throughout the United States, as well as in a large number of countries around the world. A central function of the Chamber is to represent the interests of its members in important matters before the state and federal courts, legislatures, and executive branches. To that end, the Chamber files *amicus* briefs in cases that raise issues of vital concern to the nation's business community.

The American Chemistry Council ("ACC") represents the leading companies engaged in the business of chemistry. The business of chemistry is a $664 billion enterprise and accounts for ten cents of every dollar in U.S. exports.

The American Petroleum Institute ("API") is a nationwide, non-profit, trade association headquartered in Washington, D.C., that represents over 400 members engaged in all aspects of the petroleum and natural gas industry, including exploration, production, transportation, refining and marketing.

CropLife America ("CLA"), which was organized in 1933, is the nationwide not-for-profit trade organization representing the major manufacturers, formulators, and distributors of crop protection and pest control products. CLA is headquartered in Washington, D.C. Its member companies produce, sell, and distribute most of the active compounds used in crop protection products registered for use in the United States. CLA represents its members' interests by, *inter alia*, monitoring federal agency regulations and agency actions and related litigation to

identify issues of concern to the crop protection and pest control industry, and participating in such actions when appropriate.

The National Association of Manufacturers ("NAM") is the nation's largest industrial trade association, representing small and large manufacturers in every industrial sector and in all 50 states. NAM's mission is to enhance the competitiveness of manufacturers by shaping a legislative and regulatory environment conducive to U.S. economic growth and to increase understanding among policymakers, the media and the general public about the vital role of manufacturing to America's economic future and living standards.

The National Petrochemical and Refiners Associations ("NPRA") is a national trade association that represents more than 450 companies who own or operate most U.S. refining capacity, as well as petrochemical manufacturers with processes similar to refiners. NPRA members supply consumers with a wide variety of products and services used daily in their homes and businesses. These products include gasoline, diesel fuel, home heating oil, jet fuel, lubricants and the chemicals that serve as "building blocks" in making everything from plastics to clothing to medicine to computers.

Certain members of the Chamber, ACC, API, CLA, NAM, and/or NPRA have been identified as potentially responsible parties at contaminated sites across the country pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601-9675 ("CERCLA"), and have participated in cleaning up many such sites. Moreover, many members of these associations are engaged in the manufacture and sale of chemicals and other products containing hazardous substances and utilize common carriers to transport and deliver such products to their customers' facilities. Therefore, these *amici* and their respective members

have a substantial interest in the federal courts' proper interpretation and application of the CERCLA "arranger" liability provision set forth in section 107(a)(3) of CERCLA, 42 U.S.C. § 9607(a)(3), as it relates to situations involving the sale of useful products. These *amici* are also significantly affected by and concerned about the standards adopted by the court below for determining when a defendant in a CERCLA cost recovery action may avoid the imposition of joint and several liability by demonstrating that there is a reasonable basis for apportioning the harm at a contaminated site.[1]

REASONS FOR GRANTING THE PETITION

The Court should grant the petitions for writ of certiorari of Shell Oil Company ("Shell") and the Burlington Northern and Santa Fe Railroad Company and Union Pacific Railroad Company (the "Railroads"). The petitions raise issues of substantial importance to companies that sell chemicals and other products — companies that collectively represent a large portion of the Nation's GNP. First, the decision rendered below by a panel of the U.S. Court of Appeals for the Ninth Circuit ("Panel") widens the already broad net of CERCLA liability to encompass those who sell chemicals or other products in the ordinary course of business based on the assertion that such companies have somehow "arranged for the disposal" of their products at the same time they

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[1] Pursuant to this Court's Rule 37.6, *amici* affirm that no counsel for any party has authored this brief in whole or in part, that no such counsel or party made a monetary contribution to fund the preparation or submission of this brief, and that no person other than *amici* and their counsel made such a monetary contribution. Pursuant to this Court's Rule 37.2, counsel of record for both petitioners and respondents were notified of the intent to file this brief at least 10 days prior to the filing of this brief and the parties' letters consenting to the filing of this brief have been filed with the Clerk's office.

are delivering them to customers for use. Given the magnitude of the costs typically associated with cleaning up contaminated sites, the imposition of such costs on chemical manufacturers and suppliers places a significant burden on these manufacturers and suppliers. Congress did not intend to impose that burden and it can hardly be said to be in accord with the "polluter pays" principle.

That Congress did not intend for manufacturers and suppliers to shoulder these burdens for merely selling their products is evident from the plain language of the statute. The Panel's decision cannot be reconciled with that language. The decision ignores the key role played by the intent of the parties to a transaction in determining whether a seller of goods has "arranged for the disposal" of a hazardous substance and can therefore be held liable under section 107(a)(3) of CERCLA. 42 U.S.C. § 9607(a)(3). The Panel focuses on the breadth of the term "disposal" under CERCLA, *id.* § 9601(29), but treats the term as if it were untethered from the remainder of the statutory provision and fails to recognize that in order to be liable under section 107(a)(3) a party must *arrange for* disposal. As other circuits have recognized, determining whether a party has arranged for disposal requires an analysis of the purpose of the transaction.

The Panel's decision also is inconsistent with the numerous CERCLA cases involving sales of useful products. The courts have generally held that where the purpose of the transaction was the sale of a useful product, the seller of the product is not liable as an "arranger." The Panel suggests that these cases are distinguishable but its opinion in fact represents a significant departure from prior case law — holding a seller of new, ready-to-use chemicals liable for the cleanup of spills of such chemicals that occurred at the buyer's facility on the buyer's watch.

In taking this step, the Panel has put Ninth Circuit law squarely in conflict with decisions of other circuits. For that very reason, nine judges dissented from the decision of the court not to hear the case *en banc*. The law of the Ninth Circuit now directly conflicts with precedent from the U.S. Court of Appeals for the Seventh Circuit holding that a chemical supplier not liable as an "arranger" on very similar facts. The Court should grant the petition to address this clear conflict. In the absence of such resolution by the Court, the Panel's decision will impose substantial and unwarranted burdens on manufacturers and suppliers of chemicals and other products and disrupt longstanding relationships between suppliers and the common carriers that deliver their goods.

The Court also should grant the petitions in order to review the Panel's ruling regarding the standards for apportionment of harm under section 107 of CERCLA. As described at greater length in the Railroads' petition, the heightened evidentiary standards established by the Panel for demonstrating that there is a basis for apportioning harm creates conflicts with decisions from other circuits and will make it more likely that parties will be jointly and severally liable for the entire cost of a cleanup of a site within the jurisdiction of the Ninth Circuit.

I. THE PANEL'S DECISION ERRONEOUSLY EXPANDS THE SCOPE OF CERCLA "ARRANGER" LIABILITY AND CREATES A CONFLICT BETWEEN THE CIRCUITS

A. The Panel's Ruling Subjects a Mere Seller of Useful Products to CERCLA Liability Absent Any Showing That the Seller Intended to Arrange for the Disposal of Hazardous Substances

The decision below erroneously expands the scope of CERCLA "arranger" liability by failing to properly consider Shell's underlying intent in entering into the relevant sales transactions with Brown & Bryant ("B&B"). The Panel essentially ruled that a seller of useful products — Shell — was subject to CERCLA "arranger" liability for the inadvertent and unintended leakage of some of the product during its transfer from the common carrier's tank trucks to the buyer's storage tanks at the buyer's facility. In doing so, the Panel misconstrued the language of the statute.

CERCLA provides, in relevant part, that an "arranger" is a "person who by contract, agreement, or otherwise arranged for disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous substances . . . ." 42 U.S.C. § 9607(a)(3). The Panel rationalized that it was not necessary to consider Shell's underlying intent in selling its products to B&B because CERCLA defines the term "disposal" to include "such unintentional processes as 'leaking.'" Pet. App. 44a. Without considering the meaning and effect of the related statutory phrase "arranged for," the Panel concluded that the "'disposal' need not be purposeful"[2] for purposes of imposing CERCLA "arran-

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[2] Neither of the two court decisions cited by the Panel in support of its conclusion — *Carson Harbor Village Ltd. v. Unocal Corp.*, 270

ger" liability upon a seller for its sale of a useful product. *Id.* As a result, the Panel summarily concluded that "an entity [such as Shell] can be an arranger even if it did not intend to dispose of the product." *Id.*

That analysis is incorrect. As the nine judges who dissented from the denial of a rehearing *en banc* explained, the term "disposal" cannot be considered in isolation but must be read in the context of the entire statutory provision. "[E]ven though the definition of 'disposal' may include unintentional practices, mere 'disposal' does not constitute *arranger* liability." Pet. App. 70a. Rather, under the express terms of section 107(a)(3) of CERCLA "arranger liability requires the defendant to have 'arranged for' such *disposal* (not just arranged for the sale)" and "[t]his connotes an intentional action toward achieving the purpose: disposal." Pet. App. 70a (*citing* Webster's Third New International Dictionary 120 (1993) (defining "arrange" as "to make preparations for")) (emphasis in original). Thus, absent any intent on the part of the seller to dispose of hazardous substances, the mere possibility that leakage of some of the product may occur during the transfer to B&B's storage tanks "cannot mean that Shell, as a seller, *arranged for* such leakage." Pet. App. 71a.

Numerous circuits have applied the well-established "intent" factor to determine whether a seller of a "product" should be subject to CERCLA "arranger" liability under section 107(a)(3). *See, e.g., Freeman v. Glaxo Wellcome, Inc.*, 189 F.3d 160 (2d Cir. 1999) ("*Freeman*"); *Pneumo Abex Corp. v. High Point, Thomasville & Denton R.R. Co.*, 142 F.3d 769 (4th Cir. 1998) ("*Pneumo Abex*"); *United States v. Cello-Foil*

F.3d 863 (9th Cir. 2001), and *United States v. CDMG Realty Co.*, 96 F.3d 706 (3rd Cir. 1996) — concerned an interpretation of section 107(a)(3) of CERCLA.

Products, Inc., 100 F.3d 1227 (6th Cir. 1996) ("*Cello-Foil*"); *Amcast Indus. Corp. v. Detrex Corp.*, 2 F.3d 746 (7th Cir. 1993) ("*Amcast*"); *AM International, Inc. v. International Forging Equipment Corp.*, 982 F.3d 989 (6th Cir. 1993) ("*AM Int'l*"); *Florida Power & Light Co. v. Allis Chalmers Corp.*, 893 F.2d 1313 (11th Cir. 1990) ("*Florida P & L*"). These cases make clear that the purpose of the transaction plays an essential role in CERCLA "arranger" liability determinations.

For example, in *Cello-Foil* the Sixth Circuit stated that "[n]otwithstanding the strict liability nature of CERCLA, it would be error for us not to recognize the indispensable role that state of mind must play in determining whether a party has 'otherwise arranged for disposal . . . of hazardous substances.'" 100 F.3d at 1231. The court observed that the phrase "otherwise arranged for disposal" "embrace[s] a concept similar to those of 'contract' or 'agreement.'" *Id.* Therefore, it is essential for the court to inquire into "what the parties had in mind with regard to the disposition of the hazardous substance" because "including an intent requirement into the 'otherwise arranged' concept logically follows the structure of the arranger liability provision." *Id.* The inquiry regarding "what the parties had in mind" necessarily must focus on the purpose the transaction, *i.e.*, was it a sale of a useful product or the disposal of waste or other unwanted material.

The Sixth Circuit concluded that an examination of the underlying intent of the parties is not only consistent with the text of section 107(a)(3), but also with the general strict liability nature of CERCLA because "[o]nce a party is determined to have the requisite intent to be an arranger, then strict liability takes effect." *Id.* at 1232. As a result, the Sixth Circuit concluded that, for the purpose of determining whether to impose CERCLA "arranger" liability, an essential inquiry of the court must

be "whether the party intended to enter into a transaction that included an 'arrangement for' the disposal of hazardous substances."[3] *Id.* at 1231. The Ninth Circuit erred in departing from that analysis here.

B. If It Had Properly Interpreted and Applied the CERCLA "Arranger" Liability Provision, the Panel Would Have Considered Shell's Underlying Intent With Respect to the Sales Transactions and Found Shell Not Liable

If the Panel had properly considered Shell's underlying intent in its sales of pesticide to B&B, Shell would not be subject to CERCLA liability because the record lacks any evidence of intent on the part of Shell to arrange for disposal of hazardous substances. The record amply establishes that Shell entered into the transactions with B&B to sell a product that it had purposely manufactured for sale as a useful product because it had value and a marketplace of customers, such as B&B. The pesticide purposely manufactured and sold by Shell to B&B was one of Shell's principal business products, not a waste or byproduct which had no value and had to be disposed of. There is no evidence in the record that Shell had any intent to dispose of this product at B&B's facility or anywhere else.

Moreover, the substantial safety precautions that Shell undertook in order to ensure that its product was properly delivered to B&B's facility and transferred to B&B's storage tanks belie even an inference that Shell had any "intent" to arrange for the disposal of hazardous substances at B&B's facility. The evidence in the record regarding Shell's substantial precautions includes, for

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[3] In *Cello-Foil*, the Sixth Circuit remanded the case back to the district court with instructions that it develop further findings regarding the intent of the parties that entered into the transactions at issue. 100 F.3d at 1233-34.

example, the following: (1) Shell contracted with a common carrier utilizing suitable tanker trucks to transport and deliver the product to B&B's facility; (2) Shell provided B&B with a rebate for improvements in B&B's bulk handling and safety facilities and required an inspection of such facilities by a qualified engineer; and (3) Shell distributed a manual and created a checklist of the manual's requirements to ensure that the product tanks at B&B's facility were being operated in accordance with appropriate safety requirements. Pet. App. 47a. These actions underscore the lack of any intent on Shell's part to arrange for the disposal of its products at the very time it was delivering those products to B&B for productive use.[4]

Despite the dearth of evidence that Shell had any intent to arrange for the disposal of hazardous substances at B&B's facility, the Panel imposed CERCLA "arranger" liability on Shell based on a misinterpretation and misapplication of section 107(a)(3) of CERCLA and in disregard of and conflict with decisions by a number of other circuits. The Panel acknowledged that intent is a relevant consideration in what it termed "direct arranger liability" cases but argued that there is a separate category of cases — which it labeled "broader arranger cases" — in which intent is not controlling and is not even a particularly useful concept. In these cases, according to the Panel, arranger liability is imposed where disposal of hazardous wastes is a foreseeable byproduct of, but not the purpose of, the transaction giving rise to liability. Pet. App. 42a.

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[4] Indeed, the record shows that the total amount of Shell product that leaked or spilled during transfer operations at the B&B facility was less than one-tenth of one percent (*i.e.*, 81 gallons spilled per year of a total amount of 122,930 gallons delivered per year, or 0.07 percent). Pet. App. 257a.

However, to the extent such liability has been recognized by other circuits, *see, e.g., United States v. Aceto Agric. Chem. Corp.*, 872 F.2d 1373 (8th Cir. 1989) ("*Aceto*"); *GenCorp, Inc. v. Olin Corp.*, 390 F.3d 433 (6th Cir. 2004), no court of appeals had ever extended it to cases involving the sale of useful products such as chemicals. Rather these cases have involved situations such as toll manufacturing and related circumstances.[5] For example, in *Aceto* the Eighth Circuit upheld a district court's denial of a motion to dismiss claims against a pesticide manufacturer for costs incurred by the U.S. Environmental Protection Agency ("EPA") in cleaning up contamination at a facility operated by a company that was formulating pesticide products for the manufacturer. The court found that the U.S. had stated a claim for "arranger" liability where the manufacturer supplied the formulator with the materials to be used in the formulation process, retained title to the materials throughout that process, and was aware that disposal of hazardous substances was an inherent part of the formulation process. 872 F.2d at 1379-82.

In contrast, in cases involving sales of useful products, disposal is the antithesis of the seller's goal, which is to get all of its product in the buyer's hands for beneficial use. For that reason, the courts have generally required at least some evidence that a party intended to dispose of hazardous substances found in the material being sold before imposing liability on the seller. *See, e.g., Amcast,*

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[5] The cases cited by the Panel as examples of this broader arranger liability do not involve the imposition of CERCLA liability on sellers of useful products such as Shell. For example, in *Florida P&L*, the court acknowledged the possibility that a manufacturer could be liable for contamination caused by its products but refused to impose liability on a manufacturer of transformers where there was no evidence that the transactions in question involved anything more than a sale of goods. 893 F.2d at 1318-19.

2 F.3d at 51 (the words "arrange for" imply intentional action); *Pnuemo Abex*, 142 F.3d at 775-76 (refusing to hold railroads liable as "arrangers" where they did not intend their sales of used bearings to be an arrangement for disposal of hazardous substances). The Panel acknowledged that Shell manufactured and sold B&B "a useful product," and that in accordance with the "useful product doctrine" the Ninth Circuit previously "had refused to hold manufacturers liable as arrangers for selling a useful product containing or generating hazardous substances that *later* were disposed of." Pet. App. 45a (*citing 3550 Stevens Creek Assocs. v. Barclays Bank of Cal.*, 915 F.2d 1355, 1362-65 (9th Cir. 1990). The Panel nevertheless attempted to distinguish these other "useful product cases" as inapplicable "where, as here, the sale of a useful product necessarily and immediately results in the leakage of hazardous substances." Pet. App. 45a. The Panel therefore concluded that the "useful product doctrine" was not applicable to the leaked product "that never made it to the fields for its intended use but was disposed of prior to use." Pet. App. 46a-47a.

This purported distinction finds no basis in the "useful product" defense as interpreted by the other circuits. The applicability of that defense has turned on a variety of factors such as whether the material sold was usable in its existing form or required further processing to remove hazardous substances. *See, e.g., Pneumo Abex*, 142 F.3d at 775.[6] However, the courts outside the Ninth Circuit have not looked to the timing of the disposal of hazardous substances associated with a product as being relevant to the application of the "useful product" de-

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[6] There is no question in this case that, unlike materials such as spent batteries, the chemicals that Shell sold to B&B were intended to be used in the form in which they were sold and did not require further processing prior to use.

fense. Indeed, such considerations have been effectively rejected. *See Amcast*, 2 F.3d at 751. The Panel's opinion therefore undermines the "useful product" defense and further expands the already broad net of CERCLA liability to ensnare sellers of chemicals and other goods within the jurisdiction of the Ninth Circuit that have no intent to dispose of any hazardous substances but are merely selling their goods in the ordinary course of business.

C. The Panel's Decision Creates a Direct Conflict With Decisions From Other Circuits That Applied the Well-Established "Intent" Factor For the Purpose of Determining Whether a Seller Qualifies For the "Sale Of Useful Product" Defense To CERCLA "Arranger" Liability

By disregarding this essential "intent" factor in determining whether Shell's sales of a useful product to B&B should subject Shell to CERCLA "arranger" liability, the Panel's decision creates a split among the circuits because its decision directly conflicts with the decisions of other circuits. That conflict is particularly evident with respect to the Seventh Circuit's decision in the *Amcast* case that dealt with nearly identical circumstances. In *Amcast*, the seller employed a common carrier to deliver its liquid chemical product to a customer's facility. On occasion, the common carrier would spill some of the product during transfer to the customer's storage tanks, resulting in contamination of the groundwater at the facility. 2 F.3d at 747-48. However, in contrast to the Panel's decision, in *Amcast* the Seventh Circuit properly applied the traditional "intent" test in the context of the "sale of useful product" defense and held that the seller was not subject to CERCLA "arranger" liability due to the spillage of

product during transfer operations. The Seventh Circuit stated as follows:

> [Seller] hired a transporter, all right, but it did not hire it to spill [product] on [the Buyer's] premises. Although the statute defines disposal to include spilling, the critical words for present purposes are "arranged for." The words imply intentional action. The only thing that [Seller] arranged for [the common carrier] to do was deliver [product] to [Buyer's] storage tanks. It did not arrange for spilling the stuff on the ground.

Amcast, 2 F.3d at 751. The Seventh Circuit thus concluded that "when the shipper is not trying to arrange for the disposal of hazardous wastes, but is arranging for the delivery of a useful product, he is not a responsible person within the meaning of the [CERCLA] statute." *Id.*

The Panel's decision also conflicts with decisions of the Second, Fourth, Sixth and Eleventh Circuits which properly consider the "intent" factor in cases involving the sale of useful products. For example, in *Freeman* the Second Circuit addressed the liability of a pharmaceutical company which sold chemical reagents to a buyer of chemical intermediates. The buyer subsequently stored the reagents at its facility. EPA eventually concluded that there had been a release or threatened release of hazardous substances from the buyer's facility that required a CERCLA cleanup. 189 F.3d at 162. The Second Circuit ruled that the pharmaceutical company that had sold the chemical reagents was not subject to CERCLA "arranger" liability because the underlying intent of the transaction was a mere sale of a useful product, stating that "it is uncontroverted that [the pharmaceutical company] merely sold unused chemicals that it would ordinarily use in its laboratories to [the buyer] so that [the buyer] could use or resell them . . . ." *Id.* at 164.

Similarly, *Pneumo Abex* involved a railroad which had sold used journal bearings to a foundry for processing into new bearings. The Fourth Circuit ruled that the railroad was not subject to CERCLA "arranger" liability because the intent of the railroad was to sell a valuable product, not to dispose of unwanted material or waste. *Pneumo Abex*, 142 F.3d at 775-76. In so ruling, the Fourth Circuit noted that "[t]he Foundry paid the [railroad] for the bearings; the [railroad] did not pay the Foundry to dispose of unwanted metal." *Id.* at 775.

In *AM International*, the Sixth Circuit addressed a situation in which a company sold a manufacturing facility and left at the facility various chemicals that were used in the manufacturing operations. When some of these chemicals later became a source of the contamination at the facility, a CERCLA action ensued and the seller was alleged to be subject to CERCLA "arranger" liability. *AM Int'l*, 982 F.2d at 992. However, focusing on the seller's underlying intent in the sale, the Sixth Circuit noted that "[l]iability only attaches to parties that have 'taken an affirmative act to dispose of a hazardous substance . . . as opposed to convey a useful substance for a useful purpose," and therefore ruled that the seller was not liable because "the chemicals were not left at the facility with disposal in mind." *Id.* at 999.

Finally, in *Florida P & L*, the Eleventh Circuit dealt with a circumstance in which a company manufactured and sold PCB-containing transformers. When those transformers were later sold as scrap and the reclamation of the transformers resulted in spillage of the PCB-contaminated mineral oils. *Florida P & L*, 893 F.2d at 1315. Affirming the district court's summary judgment in favor of the manufacturer, the Eleventh Circuit examined the record for evidence of the manufacturer's intent in entering into the sales transactions, and concluded that there was no evidence "that the manufac-

turers intended to otherwise dispose of hazardous waste when they sold the transformers." *Id.* at 1319.

The conflict between the Panel's decision and the decisions of these other circuits could not be clearer. The other circuits require an intent to dispose as a precondition to "arranger" liability under section 107(a)(3) of CERCLA where the defendant merely engaged in the sale of a useful product, a precondition rejected by the Ninth Circuit. Moreover, the conflict between the Panel's decision and the decisions of these other circuits is not some minor legal distinction or nuance; rather, the Panel's decision conflicts with these other decisions in a fundamental and material respect. The disparity in the Panel's decision as compared to the Seventh Circuit's decision in the *Amcast* case — despite nearly identical circumstances — simply underscores the stark nature of the conflict created by the Panel's decision.

II. THE PANEL'S RULING WILL HAVE A SUBSTANTIAL AND DETRIMENTAL IMPACT ON SUPPLIERS OF CHEMICALS AND OTHER PRODUCTS CONTAINING HAZARDOUS SUBSTANCES

A. The Panel's Ruling Threatens to Undermine the Well-Recognized "Sale of Useful Product" Defense That Suppliers Have Come to Rely Upon

The Panel's decision threatens to undermine the well-recognized "sale of useful product" defense that suppliers of useful products have come to rely upon. While many of the CERCLA statutory provisions have been routinely criticized in the jurisprudence as inartfully written, vague and ambiguous, over the past two decades the circuits have established some level of uniformity with respect to the proper interpretation and application of the

CERCLA "arranger" liability provision in the "sale of useful product" context. This uniformity is in no small measure due to the circuits' consistent acknowledgement of the essential nature of the "intent" inquiry and the concomitant premise that a supplier which merely intended to sell a product and not dispose of hazardous substances should not be subject to CERCLA "arranger" liability. The consistency among the circuits resulted in a "sale of useful product" defense that has provided suppliers of chemicals and other products containing hazardous substances with some assurance that they would not be subject to CERCLA "arranger" liability if the intent of their transactions was the mere sale of a useful product.

However, the Panel's wholesale disregard of this well-established "intent" inquiry threatens to undermine the "sale of useful product" defense, eroding the degree of certainty and protection that it has provided suppliers of chemicals and other products. With the Panel's decision, the gray area of the CERCLA "arranger" liability provision has now enveloped mere sales of useful products; under that decision the sale of useful products may qualify as an arrangement for disposal of hazardous substances if, for example, unintentional and inadvertent leakage of some of the product occurs while the common carrier and the buyer transfer the product to the buyer's tanks. As a result of the Panel's decision, every sale and delivery of a useful product potentially subjects the supplier to crippling CERCLA liability if any leakage occurs. While the web of CERCLA liability is necessarily far-reaching to effectuate the purposes of the statute, it is quite evident that CERCLA was never intended to ensnare innocent suppliers who harbored no intent to dispose of hazardous substances in conducting their sales of useful products.

A recent federal district court case applying the Panel's ruling demonstrates its far-reaching effects. In *United States v. Lyon*, 2007 WL 4374167 (E.D. Cal.), the owners of a dry cleaning establishment had been sued by the U.S. on behalf of EPA to recover costs incurred and to be incurred in cleaning up perchlorethylene ("PCE") contamination resulting from the dry cleaning operations. The owners filed a claim for contribution under CERCLA against a number of PCE manufacturers. Those manufacturers were not alleged to have had any direct contact with the owners of the dry cleaning shop or any authority or control over the disposal of PCE by the owners. Nevertheless, the district court — citing the Panel's decision — declined to dismiss the claims against the PCE manufacturers based simply on an allegation that leakage of PCE was somehow inherent in the process of transferring PCE to the dry cleaning establishment and that the manufacturers somehow had knowledge of and control over the transfer process. *Id.* at *5. Thus, chemical manufacturers that had no contact with the ultimate purchasers of their products have now been enmeshed in what will undoubtedly be expensive CERCLA litigation based on the Panel's opinion.

B. The Panel's Ruling Increases These Suppliers' Risk of Potentially Substantial Future CERCLA Liability

For suppliers of chemicals and other products, the decision below increases the risk of future CERCLA liability that could be substantial, even crippling. The Panel's ruling creates the prospect that CERCLA liability for the costs to clean up an industrial facility may be imposed on a supplier due merely to inadvertent and unintentional leakage of some of the supplier's product at the facility. Given the Panel's decision, it is reasonable to predict that CERCLA plaintiffs may target such suppliers and creatively use the Panel's decision to seek

to impose CERCLA "arranger" liability on an ever-increasing number of suppliers whose sole "crime" was the innocent sale of useful products. In fact, the Panel's decision may prompt EPA and state environmental agencies to begin to routinely identify any suppliers that sold or delivered products to the contaminated site at issue as potentially responsible parties ("PRPs"), thereby subjecting otherwise innocent suppliers to the Pandora's box of potential CERCLA liability, transactional costs and other problems that often befall a person or company formally designated as a PRP at a particular site.

The resulting liability and costs can be quite onerous. First, at sites (such as the B&B site) where the owner/operator of the facility is no longer viable, the Panel's ruling creates the possibility that EPA or the relevant state agency may not only designate any former supplier of products to the facility as a PRP at the site, but pursue the former supplier as the primary PRP at the site and seek to hold the supplier joint and severally liable for all the cleanup costs at the site.

Moreover, in view of the heightened evidentiary standards imposed by the Panel with respect to establishing a basis for divisibility of harm, any CERCLA liability imposed on such a supplier is likely to be joint and several. The Panel's decision creates standards for demonstrating divisibility of harm that may be impossible to meet and that go well beyond the reasonable basis for apportionment required by other circuits. As stated in the Brief of *Amicus Curiae* American Association of Railroads, given these strict standards parties that have a limited nexus to a site may be forced to pay huge amounts for damages to which their acts did not contribute.

Thus, a company that did no more than supply a useful product could end up bearing the entire cost to clean up a contaminated site, notwithstanding the supplier's limited

and debatable nexus to the contamination. The magnitude of these costs cannot be understated; studies have indicated that the average cost of cleaning up the sites on EPA's National Priorities List was approximately $12 million in 2001, although the cost of cleaning up some sites was much higher. *See* Resources for the Future, Superfund's Future: What Will It Cost? (RFF Press 2001), at xxv, available at http//www.rff.org/rff/RFF_Press-/CustomBookPages/Superfunds-Future.cfm. The financial implications of the Panel's decisions for a wide range of businesses are therefore quite serious.

Finally, the Panel's decision may upset the mutually beneficial business relationship between suppliers and the common carriers who deliver their products. A key aspect to the continued health of this relationship is that suppliers must be able to rely on common carriers to deliver the products without concern that the supplier may incur CERCLA liability for the carrier's actions during delivery of the products. *See Amcast*, 2 F.3d at 751 ("It would be an extraordinary thing to make shippers strictly liable under the Superfund statute for the consequences of accidents to common carriers or other reputable transportation companies that the shippers have held in good faith to ship their products."). While on the one hand, the supplier and common carrier may simply allocate the risk of this potential liability between themselves or assume additional insurance requirements in their contractual arrangement, where the potential liability at issue is CERCLA liability that may easily rise to the millions of dollars rather than merely the cost of lost product, such additional contractual arrangements that are mutually satisfactory to both parties may not be quite as easy to achieve and will undoubtedly increase the parties' costs of doing business.

In addition, many suppliers ship their products nationwide by common carrier to various customers.

These suppliers may have to tailor their contractual arrangements with common carriers by means of special liability provisions and insurance protections with respect to the shipments that will involve the delivery of products to customers located in states within the jurisdiction of the Ninth Circuit. Some of these suppliers may simply cease shipment of goods to these states if the special liability provisions and insurance protections become cost prohibitive. Such artificial constraints on interstate commerce are anathema to our integrated national economy and are a powerful reason for this Court to grant review and restore uniformity in this important area of federal law.

CONCLUSION

For the foregoing reasons and those stated in the petition for a writ of certiorari, the petition should be granted.

Respectfully submitted.

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July 25, 2008

JOINT APPENDIX

2008 U.S. S.Ct. Briefs LEXIS 9452

Supreme Court, U.S.
FILED
NOV 17 2008
OFFICE OF THE CLERK

Nos. 07-1601 & 07-1607

In the Supreme Court of the United States

THE BURLINGTON NORTHERN AND SANTA FE RAILWAY COMPANY AND UNION PACIFIC RAILROAD COMPANY,
PETITIONERS,
v.
UNITED STATES OF AMERICA, ET AL.,
RESPONDENTS.

SHELL OIL COMPANY,
PETITIONER,
v.
UNITED STATES OF AMERICA, ET AL.,
RESPONDENTS.

ON WRITS OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

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United States Court of Appeals for the Ninth Circuit Relevant Docket Entries: *United States v. Burlington Northern & Santa Fe Railway Co.*, No. 03-17169 ..... JA-7

United States District Court for the Eastern District of California Relevant Docket Entries: *Atchison, Topeka & Santa Fe Railway Co. v. Brown & Bryant, Inc.*, No. 1:92-cv-05068-OWW-DLB JA-10

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May 2, 1998 Transcript of Deposition, Testimony of David Rea (excerpts) JA-65

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April 6-7, 1999 Transcript of Proceedings, Court Trial Days 5-6, Testimony of John Brown (excerpts) JA-199

April 13, 1999 Transcript of Proceedings, Court Trial Day 9, Testimony of Gary Chirlin (excerpts) JA-236

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Trial Exhibit G-6, Expert Opinions of Daniel B. Stephens Report, July 8, 1998 (excerpts) (RR SER 265-96) JA-365

Trial Exhibit G-6, Site Map (RR SER 297), attached to Expert Opinions of D. Stephens JA-410

Trial Exhibit G-6, Map (RR SER 298), attached to Expert Opinions of D. Stephens JA-411

Trial Exhibit 63, Summary of Shell Invoices to B&B JA-412

Trial Exhibit 392, Aerial Photograph of Arvin Plant JA-440

Trial Exhibit 1070, Shell Marketing Agreement 1973 (Shell SER 161, 163-66) JA-441

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Trial Exhibit 1075, Shell Marketing Agreement 1986 (excerpts) (US ER 933-38, 960-62) JA-485

Trial Exhibit 1087, D-D® Fumigant Inspection Summary – Brown & Bryant (excerpts) (US ER 985-86) JA-505

Trial Exhibit 1088, Technical Audit of D-D® Soil Fumigant Bulk Handling Facilities (excerpts) (US ER 983-84) JA-508

Trial Exhibit 1119, D-D® Soil Fumigant Handling and Safety Manual (excerpts) (Shell SER 187, 189, 193, 195, 203-13, 215-25) JA-511

Trial Exhibit 1122, D-D® Soil Fumigant Safety Guide (excerpts) (Shell SER 275-79) JA-557

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Trial Exhibit 1199, Photocopy of Purchase Order No. 4197 (excerpts) (Shell SER 299) JA-583

Trial Exhibit 1414, Payment to Brown & Bryant for DD Facilities Improvement Program JA-584

Trial Exhibits 1464A and G-9, Remedial Investigation / Feasibility Study Report, Brown & Bryant Superfund Site (U.S. EPA May 23, 1993) (combined excerpts) (Shell SER 300-06A, RR SER 326-28, 336-37) JA-585

July 1999 Railroads' Proposed Findings of Fact (excerpts) JA-606

January 27, 2003 Transcript of Proceedings re Motion to Amend Findings of Fact (excerpts) JA-610

ITEMS PREVIOUSLY REPRODUCED

In accordance with Supreme Court Rule 26.1, the following items have been omitted in printing this joint appendix because they appear on the following pages of the Appendices to Petitions for Writ of Certiorari filed on June 23, 2008 by Petitioners in Case No. 07-1601 and Case No. 07-1607.

United States v. Burlington Northern & Santa Fe Railway Co.,
520 F.3d 918 (9th Cir.
Mar. 25, 2008).....07-1601 at 1a; 07-1607 at 1a

United States v. Atchison, Topeka & Santa Fe Railway Co.,
Nos. CV-F-92-5068 OWW, CV-F-96-6226 OWW, CV-F-96-6228 OWW,
2003 WL 25518047 (E.D. Cal.
July 15, 2003).....07-1601 at 82a; 07-1607 at 77a

United States v. Burlington Northern & Santa Fe Railway Co.,
502 F.3d 781 (9th Cir.
Sept. 4, 2007).....07-1601 at 263a

42 U.S.C. § 9601(1)–(20)(a).....07-1601 at 311a

42 U.S.C. § 9607(a) .....07-1601 at 317a; 07-1607 at 266a

RELEVANT DOCKET ENTRIES

U.S. Court of Appeals for the Ninth Circuit
Case No. 03-17125

Date Filed	#	Docket Text
		* * *
02/17/2004	9	Filed certificate of record on appeal
		* * *
11/23/2004	24	Filed USA's first brief on cross-appeal, and excerpts of records in 4 vols.
11/23/2004	25	Filed DTSC, California's first brief on cross-appeal
		* * *
02/17/2005	31	Filed Burlington Northern and Union Pacific Transp's second brief on cross-appeal and excerpts of record in 2 vols
		* * *
02/17/2005	33	Filed Burlington Northern and Union Pacific Transp motion to take judicial notice of EPA order
		* * *
03/18/2005	42	Filed Shell Oil Company's second brief on cross-appeal and suppl excerpts of record in 2 vols
		* * *

04/21/2005	43	Filed USA's third brief on cross-appeal and suppl excerpts of record in 1 vol
04/21/2005	45	Filed DTSC, California's third brief on cross-appeal and copies of record
		* * *
07/11/2005	68	Filed Shell Oil Company's reply brief
		* * *
08/04/2005	71	Filed certified record on appeal
		* * *
09/07/2005	75	Filed appellee Burlington Northern and Union Pacific Transp's 38 pages brief
		* * *
09/12/2005	77	Argued and submitted to Betty B. Fletcher, John R. Gibson, Marsha S. Berzon
		* * *
03/16/2007	87	Filed opinion: affirmed in part, reversed in part. Filed and entered judgment.
		* * *
05/07/2007	99	Filed Appellee Shell Oil Company petition for panel rehearing and petition for rehearing en banc
05/07/2007	101	Filed Appellee Burlington

		Northern, Appellee Union Pacific Transp petition for panel rehearing and petition for rehearing en banc
		* * *
07/30/2007	109	Filed DTSC, California's response to petition opposing petitions for en banc rehearing
07/30/2007	111	Filed Appellant USA's response to petition opposing petitions for en banc rehearing
09/04/2007	113	Filed order and amended opinion
		* * *
03/25/2008	125	Filed order and amended opinion. Denying Petitions for rehearing and en banc rehearing; (Judge Bea dissents from order denying petition for rehearing en banc)
		* * *
04/03/2008	128	Filed order. The unopposed motions to stay the mandate filed by Shell and by the Railroads are granted.
		* * *

U.S. Court of Appeals for the Ninth Circuit
Case No. 03-17153

Date Filed	#	Docket Text
		* * *
02/17/2004	9	Filed certificate of record on appeal
		* * *
11/23/2004	19	Filed USA's first brief on cross-appeal, and 5 excerpts of record in 4 vols.
11/23/2004	20	Filed DTSC, California's first brief on cross-appeal
		* * *
02/17/2005	24	Filed Burlington Northern and Union Pacific Transp's second brief on cross-appeal and excerpts of record in 2 vols
		* * *
02/17/2005	26	Filed Burlington Northern and Union Pacific Transp motion to take judicial notice of EPA order
		* * *
03/18/2005	33	Filed Shell Oil Company's second brief on cross-appeal and suppl excerpts of record in 2 vols
		* * *
04/21/2005	34	Filed USA's third brief on cross-appeal and suppl excerpts of

record in 1 vol

* * *

04/21/2005	36	Filed DTSC; California third brief on cross-appeal and copies of record

* * *

07/11/2005	54	Filed Shell Oil Company's reply brief

* * *

09/07/2005	59	Filed appellee Burlington Northern and Union Pacific Transp's brief

* * *

09/12/2005	61	Argued and submitted to Betty B. Fletcher, John R. Gibson, Marsha S. Berzon

* * *

03/16/2007	71	Filed opinion: affirmed in part, reversed in part. Filed and entered judgment. [03-17125, 03-17153, 03-17169]

* * *

05/07/2007	78	Filed Appellee Shell Oil Company petition for panel rehearing and petition for rehearing en banc
05/07/2007	79	Filed Appellee Burlington Northern, Appellee Union Pacific Transp petition for panel

		rehearing and petition for rehearing en banc
		* * *
07/30/2007	86	Filed Appellant DTSC, California's response to petition opposing petitions for en banc rehearing
07/30/2007	87	Filed Appellant USA's response to petition opposing petitions for en banc rehearing
09/04/2007	88	Filed order and amended opinion
		* * *
03/25/2008	94	Filed order and amended opinion. denying petitions for rehearing and en banc rehearing
		* * *
04/03/2008	97	Filed order. The unopposed motions to stay the mandate filed by Shell and by the Railroads are granted.
		* * *

U.S. Court of Appeals for the Ninth Circuit
Case No. 03-17169

Date Filed	#	Docket Text
		* * *
02/17/2004	7	Filed certificate of record on appeal
		* * *
11/23/2004	17	Filed USA's first brief on cross-appeal and excerpts of record in 4 vols
11/23/2004	18	Filed DTSC, California's first brief on cross-appeal
		* * *
02/17/2005	22	Filed Burlington Northern and Union Pacific Transp's second brief on cross-appeal and excerpts of record in 2 vols
		* * *
02/17/2005	24	Filed Burlington Northern and Union Pacific Transp motion to take judicial notice of EPA order
		* * *
03/18/2005	31	Filed Shell Oil Company's second brief on cross-appeal and suppl excerpts of record in 2 vols
		* * *
04/21/2005	32	Filed USA's third brief on cross-appeal and suppl excerpts of

record in 1 vol

04/21/2005	34	Filed DTSC, California's third brief on cross-appeal and copies of record
		* * *
07/11/2005	52	Filed Shell Oil Company's reply brief
		* * *
09/07/2005	57	Filed appellee Burlington Northern and Union Pacific Transp's brief
		* * *
09/12/2005	59	Argued and submitted to Betty B. Fletcher, John R. Gibson, Marsha S. Berzon
		* * *
03/16/2007	69	Filed opinion: affirmed in part, reversed in part; filed and entered judgment.
		* * *
05/07/2007	76	Filed Appellee Shell Oil Company petition for panel rehearing and petition for rehearing en banc
05/07/2007	77	Filed Appellee Burlington Northern, Appellee Union Pacific Transp petition for panel rehearing and petition for rehearing en banc

* * *

07/30/2007	84	Filed Appellant DTSC, California's response to petition opposing petitions for en banc rehearing
07/30/2007	85	Filed Appellant USA's response to petition opposing petitions for en banc rehearing
09/04/2007	86	Filed order and amended opinion

* * *

03/25/2008	92	Filed order and amended opinion. Denying Petitions for rehearing and en banc rehearing (Judge Bea Dissents from Order denying Petition for rehearing en banc)

* * *

04/03/2008	95	Filed order. The unopposed motions to stay the mandate filed by Shell and by the Railroads are granted.

* * *

RELEVANT DOCKET ENTRIES

U.S. District Court for the Eastern District of California
Case No. 1:92-cv-05068-OWW-DLB

Date Filed	#	Docket Text
		* * *
12/09/1992	20	First amended complaint filed
		* * *
03/05/1993	31	Answer to 1st amended complaint and counterclaim by defendants Fred R Bryant, Ed A Brown, John H Brown, Brown & Bryant, Brown & Bryant Inc, Vernon A Wilson against plaintiffs Southern Pacific, Atchison Topeka
		* * *
05/24/1995	513	Motion for partial summary judgment on the issue of joint and several liability at Arvin by Plaintiff's Atchinson Topeka and Southern Pacific
05/24/1995	514	Memorandum of points and authorities by plaintiff Atchison Topeka and Southern Pacific in support of motion for partial summary judgment on the issue of joint and several liability at the Arvin Site
		* * *

05/24/1995	523	Declaration of Thomas W Kalinowski in support of motions for partial summary judgment
		* * *
07/17/1995	575	Counter-motions for summary adjudication of claims, and for partial summary judgment re: Railroad's liability at Arvin by deft, cntdft, cntclmt etc Brown & Bryant, J Brown, E. Brown, V. Wilson and M.J. Dupas
		* * *
07/17/1995	578	Memorandum of points and authorities by counter-defendant Brown & Bryant Inc., et al in support of counter-motion for summary adjudication of claims and for partial summary judgment re: Railroad's liability at Arvin
		* * *
09/11/1995	685	Supplemental declaration of Dr Thomas W. Kalinowski in reply to Brown & Bryant's joint opposition to railroad's motion for partial summary judgment re: non-liability and joint and several liability at Arvin
		* * *
11/15/1995	713	Memorandum opinion by Judge Oliver W. Wanger granting in

		part and denying in part cross-motions for summary judgment on the issue of joint and several liability at Arvin by Plaintiff's Atchinson Topeka and Southern Pacific
		* * *
01/09/1997	846	Order by Judge Wanger reassigning cases and relating case(s) 1:92-cv-5068 with member cases 1:96-cv-5879, 1:96-cv-6226, 1:96-cv-6228
		* * *
06/16/1998	933	Motion for summary judgment filed by Pltf USA
06/16/1998	934	Memorandum of points and authorities in support of motion for summary judgment against The Atchison Topeka and Santa Fe Railway Co and the Southern Pacific Transportation Co
		* * *
07/06/1998	965	Memorandum by plaintiff in 1:92-cv-05068 in opposition to motion for summary judgment
		* * *
07/12/1998	969	Memorandum of points and authorities by Dept Toxic Substance in 1:92-cv-05068 in support of motion for summary judgment against the Atchison,

		Topeka and Santa Fe Railway Company and the Southern Pacific Transportation Company
07/17/1998	970	Amended notice of motion and motion (terminating original motion 933) for summary judgment by Dept Toxic Substance in 1:92-cv-05068
		* * *
08/12/1998	985	Motion for partial summary judgment by Dept Toxic Substance against the Atchison, Topeka & Santa Fe Railway Co and Southern Pacific Transportation; memorandum of points and authorities
		* * *
09/01/1998	990	Memorandum in opposition to United States and Department of Toxic Substance's motions for summary judgment by Union Pacific Railrd in 1:92-cv-05068
		* * *
09/01/1998	993	Cross-motion for partial summary judgment by Union Pacific Railrd in 1:92-cv-05068; memorandum in support
		* * *
09/01/1998	999	Declaration of Daniel B Stephens in support of Railroads' cross-

		motion for summary adjudication
09/01/1998	1000	Declaration of Dr. Thomas W Kalinowski in support of Railroads' cross-motion for summary adjudication
		* * *
09/15/1998	1007	Joint reply by pltfs USA and Dept of Toxic Sub in support of motions for summary judgment against the railroads and in opposition to cross-motion for partial summary judgment by Union Pacific Railrd in 1:92-cv-05068
		* * *
09/15/1998	1009	Declaration of John Walton in support of USA's motion for summary judgment
09/15/1998	1010	Declaration of Gary Chirlin in support of USA's motion for summary judgment
		* * *
09/16/1998	1018	Deposition of George Mack taken on the following date(s) 3/12/98
		* * *
09/16/1998	1026	Deposition of John Howard Brown taken on the following date(s) 6/15/98
		* * *

09/21/1998	1031	Reply memorandum by Union Pacific Railrd in 1:92-cv-05068 in support of cross motion for partial summary judgment
		* * *
09/21/1998	1035	Declaration of Daniel B Stephens
		* * *
11/05/1998	1050	Notice of motion and motion for summary judgment by third-party defendant Shell Oil Company
11/05/1998	1051	Memorandum of points and authorities by third-party defendant Shell Oil Company in support of motion for summary judgment
		* * *
11/05/1998	1053	Declaration of John A Connor in support of Shell Oil Company's motion for summary judgment
		* * *
12/04/1998	1085	Response by plaintiffs Atchison Topeka and Southern Pacific in 1:92-cv-05068 in opposition to motion for summary judgment by third-party defendant Shell Oil Company
12/04/1998	1086	Response by plaintiffs Atchison Topeka and Southern Pacific in 1:92-cv-05068 to Shell's statement

		of undisputed facts in support of motion for summary judgment
		* * *
12/08/1998	1090	Notice of motion and cross-motion for partial summary judgment against Shell Oil Company by Dept of Toxic Sub in 1:92-cv-05068
		* * *
12/08/1998	1092	Memorandum of points and authorities by Dept of Toxic Sub in 1:92-cv-05068 in support of cross-motion for partial summary judgment against Shell Oil Co
12/08/1998	1092	Memorandum by Dept of Toxic Sub in 1:92-cv-05068 in opposition to Shell Oil Company's motion for summary judgment
		* * *
12/08/1998	1096	Notice of motion and motion for summary judgment against Shell Oil Company by Dept of Toxic Sub in 1:92-cv-05068
		* * *
12/23/1998	1100	Deposition of Patrick J Reeves taken on the following date(s) 12/18/97 with exhibits
12/23/1998	1101	Deposition of Robert Swain taken on the following date(s) 3/17/98

* * *

12/23/1998	1107	Deposition of David Rea taken on the following date(s) 5/2/98
12/23/1998	1108	Deposition of David Rea taken on the following date(s) 7/11/98, volume II

* * *

12/23/1998	1113	Deposition of Richard Woolley taken on the following date(s) 5/27/98

* * *

12/28/1998	1123	Reply by Shell Oil Company to the Railroads' and Governments' opposition to motion for summary judgment by third-party defendant Shell Oil Company

* * *

12/29/1998	1130	Reply by defendant Shell Oil Company to response to motion for summary judgment by third-party defendant Shell Oil Company

* * *

12/29/1998	1133	Response by Shell Oil Company motion for summary judgment against Shell Oil Company by Dept of Toxic Sub in 1:92-cv-05068

* * *

12/29/1998	1138	Response by Shell Oil to the governments and railroads cross motions for summary judgment and reply to the governments and railroads oppositions to Shell Oil Company Oil Company by Dept of Toxic Sub in 1:92-cv-05068
		* * *
01/06/1999	1140	Transcript of 10/26/98 hearing on USA's motion for summary judgment as to ATSF; DOT's motion for partial summary judgment as to ATSF
01/06/1999	1141	Reply in support of cross-motion for summary judgment against Shell Oil Company
		* * *
01/29/1999	1144	Findings and recommendations by Magistrate Judge Dennis L. Beck recommending that Railroads motions be granted; that the Brown & Bryant counterclaim be dismissed with prejudice; that Brown & Bryant parties Answer be stricken; that default judgment be entered against Brown & Bryant parties as to all remaining claims of Railroads against them in this matter
		* * *

02/19/1999	1146	Pretrial statement by USA
		* * *
02/22/1999	1148	Supplement to purported pretrial statement from cross-defendant Shell Oil Company in 1:92-cv-05068
		* * *
03/02/1999	1151	Pre-trial order approved
		* * *
03/16/1999	1175	Trial brief submitted by counter-defendant Southern Pacific in 1:92-cv-05068
		* * *
03/19/1999	1183	Memorandum and Order: by Judge Oliver W. Wanger re cross motions for summary judgment by third-party defendant Shell Oil Company [1050-1] denied with regard to the Arvin Site
		* * *
03/19/1999	1187	Trial brief submitted by third-party defendant Shell Oil Company
03/19/1999	1188	Trial brief submitted by Dept Toxic Substance
		* * *
03/19/1999	1195	Memorandum and Order: by Judge Oliver W. Wanger motions by the governments for summary

		judgment as to liability of the railroads for releases from the Brown and Bryant parcel are denied; the motions by the governments for summary judgment as to response costs from the railroads for releases on the Brown and Bryant property are denied; the railroad's motion for summary judgment that they are not liable for response costs for releases from Brown and Bryant property is denied
		* * *
03/22/1999	1198	Trial brief submitted by Dept Toxic Substance
		* * *
03/25/1999	1200	Supplemental trial brief submitted by Dept Toxic Substance re statement of claim for past response costs
		* * *
04/06/199	1209	Stipluation and order by Judge Wanger re Department of Toxic Substances Control's claim for past response costs
		* * *
04/19/1999	1223	Order by Judge Wanger re cross-motions for summary judgment against Shell Oil Company by Dept of Toxic Sub, motion for

		summary judgment by third-party defendant Shell Oil Company and motion for summary judgment filed by Pltf USA all denied on issue of arranger and operator liability with regard to Arvin site
		* * *
04/23/1999	1228	Motion for judgment on partial findings by third-party dft Shell Oil Company; and memo of points and authorities
		* * *
04/30/1999	1236	Joint response by USA and Dept of Toxic Substances Control to motion for judgment on partial findings by third-party dft Shell Oil Company
04/30/1999	1237	Joinder by Shell Oil Co in the railroads motion to strike the opinion testimony of government witness John Walton
		* * *
05/18/1999	1257	Transcript of 3/30/99 hearing on court trial, day 1
05/18/1999	1258	Transcript of 3/30/99 hearing on court trial, day 1 testimony of Lonnie Merryman

05/18/1999	1259	Transcript of 3/31/99 hearing on court trial, day 2
05/18/1999	1260	Transcript of 5/18/99 hearing on court trial, day 3
05/18/1999	1261	Transcript of 5/18/99 hearing on court trial, day 4
05/18/1999	1262	Transcript of 5/18/99 hearing on court trial, day 5
05/18/1999	1263	Transcript of 4/7/99 hearing on court trial, day 6
05/18/1999	1264	Transcript of 5/18/99 hearing on court trial, day 7
05/18/1999	1265	Transcript of 5/18/99 hearing on court trial, day 8
05/18/1999	1266	Transcript of 4/13/99 hearing on court trial, day 9
05/18/1999	1267	Transcript of 4/14/99 hearing on court trial, day 10
05/18/1999	1268	Transcript of 4/15/99 hearing on court trial, day 11
05/18/1999	1269	Transcript of 4/16/99 hearing on court trial, day 12
05/18/1999	1270	Transcript of 4/20/99 hearing on court trial, day 13

05/18/1999	1271	Transcript of 4/21/99 hearing on court trial, day 14
05/18/1999	1272	Transcript of 5/18/99 hearing on court trial, day 15
05/18/1999	1273	Transcript of 4/23/99 hearing on court trial, day 16
05/18/1999	1274	Transcript of 4/27/99 hearing on court trial, day 17
05/18/1999	1275	Transcript of 4/28/99 hearing on court trial, day 18
05/18/1999	1276	Transcript of 5/18/99 hearing on court trial, day 19
05/18/1999	1277	Transcript of 4/30/99 hearing on court trial, day 20
05/18/1999	1278	Transcript of 5/4/99 hearing on court trial, day 21
05/18/1999	1279	Transcript of 5/18/99 hearing on court trial, day 22
05/18/1999	1280	Transcript of 5/6/99 hearing on court trial, day 23
05/18/1999	1281	Transcript of 5/7/99 hearing on court trial, day 24
05/18/1999	1282	Transcript of 5/12/99 hearing on court trial, day 25

05/18/1999	1283	Transcript of 5/13/99 hearing on court trial, day 26
05/18/1999	1284	Transcript of 5/14/99 hearing on court trial, day 27
		* * *
05/19/1999	1287	Deposition of William Perkins taken on the following date(s) 5/26/98
		* * *
07/14/1999	1311	Proposed findings of fact Re: Department of Toxic substances control's claim for response costs by claimant Dept Toxic Substance in 1:92-cv-05068
		* * *
07/19/1999	1314	Railroads' proposed Conclusions of law
07/19/1999	1315	Railroads' proposed findings of fact
		* * *
07/19/1999	1317	Proposed findings of fact by Shell Oil Company
07/19/1999	1318	Proposed conclusions of law by Shell Oil Company
07/19/1999	1319	Govt's proposed findings of fact and conclusions of law
08/20/1999	1320	Response by pltfs Atchison

		Topeka Southern Pacific to Shell's Proposed findings of fact and conclusions of law
08/10/1999	1321	Response by pltfs Atchison Topeka Southern Pacific to Govt's proposed findings of fact and conclusion of law
		* * *
08/17/1999	1323	Response by claimant Dept Toxic Substance plaintiff USA to Govt's Shell's proposed findings of facts and conclusions of law
08/17/1999	1324	Response by claimant Dept Toxic Substance, plaintiff USA to Railroad's findings of fact and conclusion of law
08/18/1999	1325	Response by third-party defendant Shell Oil Company to Govt's proposed conclusions of law
08/18/199	1326	Response by third-party defendant Shell Oil Company to Govt's proposed findings of facts
08/18/1999	1327	Response by third-party defendant Shell Oil Company to Railroads' proposed findings of fact
		* * *
10/05/1999	1330	Transcript of 9/28/99 hearing on

		oral argument
		* * *
05/24/2002	1354	Findings of fact and conclusions of law by Judge Oliver W. Wanger; judgment shall be entered in the amount of $702,871.51 plus interest against Atchison Topeka & Santa Fe Railway and the Southern Pacific Transportation Company and in the amount of $468,581.01 plus interest against Shell Oil Company; Declaratory judgment shall be entered in favor of pltfs and against the Railroads and Shell Oil for future response costs at the Site in the percentages of 9% and 6% according to proof; the federal government attorneys shall propose a form of judgment and lodge with the court within five days of the service of these findings
		* * *
06/26/2002		Lodged Judgment on decision by the court by plaintiff
07/09/2002		Lodged proposed order re pltfs claims for interest, attorneys fees, and costs of suit and re: DTSC's response costs by Railroads'
		* * *

07/09/2002		Lodged judgment on decision by the Court by Shell
		* * *
07/10/2002		Lodged judgment on decision by the court
		* * *
07/17/2002	1375	Master exhibit list
		* * *
08/22/2002	1377	Order by Judge Oliver W. Wanger ordering the modification of the findings of fact and conclusions of law to enter judgment for DTSC
		* * *
09/12/2002	1381	Motion to amend the court's findings of fact and conclusions of law by Plaintiff Dept Toxic Substance
09/12/2002	1382	Memorandum of points and authorities by Dept Toxic Substance in support of motion to amend the court's findings of fact and conclusions of law
		* * *
10/25/2002	1388	Railroads' notice of motion and motion to amend the Court's findings of fact and conclusions of law
10/25/2002	1389	Railroads' memorandum of points

		and authorities in support of motion to amend the Court's findings of fact and conclusions of law
		* * *
10/28/2002	1390	Notice of motion and motion to add and amend findings of fact and conclusions of law by third-party defendant Shell
10/28/2002	1391	Memorandum of points and authorities by third-party defendant Shell in support of motion to add and amend findings of fact and conclusions of law
		* * *
11/27/2002	1394	Opposition of defendant and cross-defendant Shell Oil Company to the Govt's motion to amend the court's findings of and conclusions of law
11/27/2002	1395	Partial opposition of Shell to the Railroads' motion to amend
12/02/2002	1396	Railroads' opposition to Government's motion to amend
12/02/2002	1397	Railroads' memorandum in opposition to Shell's motion to add and amend findings of fact and conclusions of law
12/02/2002	1398	Railroads' memorandum of law in

		opposition to Shell's motion to add and amend findings of fact and conclusions of law
12/09/2002	1399	Shell's reply to response to motion to add and amend findings of fact and conclusions of law
12/09/2002	1400	Response by plaintiff Southern Pacific in 1:92-cv-05068 to partial opposition of Shell Oil to Railroad's motion to add and amend findings of fact and conclusions of law
12/09/2002	1401	Railroad's reply by plaintiff Southern Pacific in 1:92-cv-05068 to the govt's opposition to Railroad's motion to amend the court's findings of fact and conclusion of law
12/09/2002	1402	Reply memorandum of law in support of the govt's motion to amend the court's findings of fact and conclusions of law
		* * *
02/11/2003	1410	Supplemental brief of cross-dft Shell Oil Company re motions to amend findings and conclusions
		* * *
02/19/2003	1412	Reply by pltfs Atchison Topeka and Southern Pacific in 1:92-cv-

		05068 regarding Shell Oil Co's supplemental brief re motions to amend findings and conclusions
05/28/2003	1413	Memorandum opinion and order by Judge Oliver W. Wanger re findings of fact, motion to add and amend findings of fact and conclusions of law by third-party defendant Shell Oil Co, motion to amend by dft Railroad granted, motion to amend the court's findings of fact and conclusions of law by Plaintiff Dept Toxic Substance denied
		* * *
06/13/2003	1417	Errata re order on dfts' separate motions to amend the court's findings of fact and conclusions of law
		* * *
07/15/2003	1419	Amended findings of fact and conclusions of law by Judge Oliver W. Wanger
		* * *
09/10/2003	1428	Judgment on decision
		* * *
10/31/2003	1435	Notice of appeal by claimant Dept Toxic Substance
		* * *
11/06/2003	1439	Notice of appeal by plaintiff USA

* * *

11/12/2003	1441	Notice of cross-appeal by dft/cross-appellant Shell

* * *

02/12/2004	1472	Transcript of 1/27/03 hearing on motion to amend findings of fact
02/12/2004	1473	Transcript of 2/3/03 hearing on motion to amend findings of fact

* * *

U.S. District Court for the Eastern District of California
Case No. 1:96-cv-06226-OWW-DLB

Date Filed	#	Docket Text
		* * *
11/07/1996	1	Complaint
11/14/1996	3	Notice by plaintiff Dept Toxic Substance of related case(s) CV F 96 6228; CV F 96 5068
12/09/1996	4	First amended complaint
		* * *
03/20/1997	14	Answer by defendant Southern Pacific to first amended complaint
03/20/1997	15	Crossclaim by defendant Southern Pacific against defendant Shell Oil Company
03/26/1997	16	Answer by defendant Brown and Brynt Inc to first amended complaint
03/26/1997	17	Amended answer to first amended complaint by defendant Brown and Brynt Inc
		* * *
04/16/1997	21	Notice by cross-claimant Southern Pacific in 1:96-cv-06226 of related case(s) 1:96cv6228;

1:92cv5068

* * *

07/31/1997	31	Answer by defendant Shell Oil Company
07/31/1997	32	Answer to cross-complaint by cross-defendant Shell Oil Company

* * *

U.S. District Court for the Eastern District of California
Case No. 1:96-cv-06228-OWW-DLB

Date Filed	#	Docket Text
		* * *
11/07/1996	1	Complaint
		* * *
03/20/1997	7	Cross-claim by defendant Southern Pacific against defendant Shell Oil Company
03/20/1997	8	Answer by defendant Southern Pacific
		* * *
03/26/1997	10	Amended answer to complaint by defendant Southern Pacific
		* * *
04/16/1997	13	Notice by deft Southern Pacific in 1:96-cv-06228 of related case(s) CV-F-96-6226-OWW-DLB, CV-F-92-5068-OWW-DLB
		* * *
07/31/1997	24	Answer to complaint by Defendant Shell Oil Company
07/31/1997	25	Answer to cross-complaint by cross-defendant Shell Oil Company
		* * *

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, et al., Plaintiffs, vs. BROWN &BRYANT, INC., et al., Defendants.	NO. CV-F-92-5068 OWW/DLB (CONSOLIDATED ARVIN CASES)
THE DEPARTMENT OF TOXIC SUBSTANCES CONTROL, Plaintiff, vs. THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, et al., Defendants.	NO. CV-F-96-5879 OWW (CONSOLIDATED SHAFTER CASES)

UNITED STATES OF AMERICA,

Plaintiff,

vs.

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, et al.,

Defendants.

DEPOSITION OF PATRICK J. REEVES, P.E.

THURSDAY, DECEMBER 18, 1997

9:10 A.M.

* * *

[16]

* * *

Q Well, let me ask you. Was there a typical pattern to your doing this work for Shell at these particular sites?

A Yes.

Q What was that typical pattern?

A Each of the people who supplied bulk, just the bulk storage were given a three-ringed binder or a manual.

And in that manual, it had all of the procedures and more or less criteria for storing their chemical.

This document was prepared by Shell. And in most

cases, we were basically kind of a watchdog for Shell that those people when we would go to these places, this Brown & Bryant, for instance, we would want to know where is that manual, first thing. We would ask who has read it. If they were familiar with it, and if they had any questions.

We would then go out to wherever their storage tank or tanks were. And we would inspect them for the type of material, in other words, whether it was steel or aluminum or fiberglass, whatever kind of material that they were using to store it.

We would be sure that it had the right kinds [17] of valves. And if the storage had a containment facility large enough so that if in a catastrophic event rupture of the storage vessel, that it would be able to be contained within this area.

And we would tell them that it had to be concrete. It had to be impervious material. Asphalt was not approved. But it couldn't be plastic, and it had to be something that could weather.

And we would explain and give them ideas as to what kind of materials could be used. I mean even concrete block needed to be treated because it would go through concrete block.

So that is the kind of thing we did with them. We also looked to see that they had the right kind of breathing apparatus for safety, the right kind of rubber, I don't even remember if rubber gloves, but it was a certain kind of material to protect themselves if they are ever handling this material.

We would also share with them various things we found from other plants where people didn't take the precautions and the kinds of damage that were done to a number of individuals.

So it was an awareness that we were trying to instill with each of the places we went. We were always, I don't want to use the word chaperoned by the local sales [18] representative, and in this case, his name was David Rea, R-e-a, for this area.

And that way, the sales representative would also be trained to know that he was supposed to have read the manual, also, and that he could learn from me the kinds of valving that they needed to have, the kinds of safety equipment, the eyewash facilities, those kinds of things.

And if we saw anything that didn't comply with the Shell manual, we would write them up in a report and say these are the things that you need to do.

And then it was up to the local sales representative to kind of check on them.

Q Now, did you do this same basic pattern, this typical pattern with the two Brown & Bryant sites?

A. Yes.

Q And do you remember visiting those two sites?

A Yes.

Q Do you remember how many sites you went to with David Rea?

A More than two.

Q More than Shafter and Arvin you are saying?

A Yes.

Q Do you remember going with him to any other sites?

* * *

[52]

* * *

A. If there was a hose or a coupling that was located in the yard that they then attached to a truck that was going to come or go, yes, we looked at everything that was associated with that facility.

Q. Did part of what you look at also include how the D-D was cleaned out of tanks?

A. No.

Q. Did you look at what happened to D-D—well, let's get to it when we go down the checklist.

What kind of body protection were the Brown & Bryant workers supposed to use when they were transferring D-D in and out of the bulk handling, the bulk storage facility at Brown & Bryant?

A. They had their option in terms of whether they wanted to wear a full slicker suit, an apron or special resistant coveralls.

They all were supposed to have gloves and then they were supposed to have something that would cover their, you know, where a spill might occur.

Q So the front part of their body?

A Yeah.

Q And do you have any specific memory about what [53] you were told was the Brown & Bryant?

A No.

Q Apparel?

Is that "no"?

A "No." Excuse me.

Q So then turning the page to 071468, these were questions about safety equipment that was available in the case of some kind of spill; is that right?

A Yes.

Q Then turning the page to the next page, what

information went into the tankage section right at the top of the form?

A Well, if we would note if there was one or two tanks. There was seldom more thin two tanks. The diameter, the length or the height.

In some cases they were laying. Sometimes they were standing straight up. It varies with the location.

The approximate number of gallons. So we would calculate all of that by measurement as to how. Sometimes they had stamps on them. Sometimes they didn't.

Q And was that just to have the description or did you understand it to have some other purpose for collecting that information?

A Well, no. There is a purpose because we [54] would, further on we would talk about the containment. So we had to calculate the volume for containment.

Q The next section is labeled "Construction."

And what information was important there from the perspective of this inspection?

A Well, we were looking to see if the tank was, the suitable material according to their manual. If it was a polyolefin, a PVC, a rubber tank, a steel tank, whatever it was, we would note that.

And if we could determine what the thickness of it or the rating of it, we would do that.

A lot of times we couldn't, but we would make notes that that might want to be clarified at a later time. But it wasn't part of our scope of work, because you can see from our fees we were only given a very small allocation.

Q Then the next entry is "Location," and there is a schematic there. How did you use that?

A Well, this schematic is so small. We would use it. We would, that is why we needed an additional sheet to show the location, the property lines or walls or things like that. We really didn't use this to speak of.

Q Then the next heading is "Foundation." And what information did you collect for that that had relevance to this inspection? [55]

A Well, we just note if it was on a concrete foundation or if it was on asphalt or if it was horizontal tank and it had concrete piers, we would note the dimensions and the sizes of those piers.

Q And how was it supposed to be? What was the foundation supposed to be?

A Well, it was supposed to be an impervious material so that if it leaked it wasn't going to get into the underground. I don't remember what the, this particular site was.

Q Would gravel or small rock bed have been an appropriate foundation?

A No.

Q When you say "no" and that is because it needed to be impervious?

A Correct.

Q And then there is a section called. "Access."

What was the purpose of that?

A Oh, just to note for the record if they had a—if there were any components on the tank that you couldn't—that needed to be maintained or serviced, if there was a fixed stairway up to it or if they used a ladder to put against it or if, some of the tanks were very low to the ground and you could do everything without having to climb onto the tank. [56]

Others had a lot of important things that were going in and out of the roof, for instance, that was way up high. Then you needed the handrail and stuff. Again, this was more or less for safety purposes.

Q Then the next entry is "Spill Containment Provisions."

It has:

"Diking-Height, Dimensions, Tanks with Common Dike."

If they didn't have a dike, you would put an "N" in the brackets?

A Yes.

Q Or in the parentheticals.

Then next it says:

"Controlled run-off to:"

What was that about?

A If these tanks would actually flow into something, we would indicate where they would flow.

Q So if there was no dike or containment, secondary containment, then you would use this "Controlled run-off to:" section to explain where—

A Where it was going.

Q —where it would go?

A Yeah, where it would go.

Q And then the next entry or the next line says: [57]

"Sewers, ditches and streams protected?"

What did that mean?

A If there was, for instance, a sewer manhole in the yard in some of these cases where they didn't have containment, at that moment in time, if water, I mean water, D-D could actually get to any of these facilities,

then that is not protected.

Q The next entry is "Moisture Control" on Page 071470.

What was the importance of the information that was collected there?

A To be honest with you, I don't recall. But I know that the fumigant, I believe it broke down with time if it didn't have some kind of moisture control device.

So if they didn't have one, we would write them up that they needed to get one. But there were two types. One was, and most of them did have the inert gas device where they would periodically recharge it much like an air conditioning system with freon or something along those lines.

Q And then the next entry is "Emergency relief." What was the information that was important there or why was it important is really my question.

A I don't recall.

Q The next entry says: [58]

"Pressure/vacuum relief (breathing.)"

What did that mean?

A There are times in the day, especially when it gets real hot, real cold and the material can expand and shrink and consolidate.

So that if you had a major temperature change, the moist—it would in fact consolidate and you might have a little bit of a vacuum or, vacuum occur in the tank so as to keep the tanks from going out and in. They allow this, an air device that would allow air to either come into the tank or relieve the tank.

Q And then there is, the next entry is "Level indication". What was that about?

A Well, they, we want to know how much fluid is in the tank so they don't overtop it when they are filling it or let it go totally empty.

So there is, we indicate what kind of a—and we don't really want them to open up a lid and do as in a gas station where you run this rod in there, because if you pull it out, you are going to get it on your hands and it's going to drip. So we wanted them to have internal measurement devices to know what the level of the fluid is in the tank.

Q Were there certain devices that were even of the kind you are describing that were not approved because [59] they would tend to leak, for instance?

A I don't recall. We usually had site gauges. And if we saw that they were not protected, we would mention that; in other words, a glass site gauge that was out on the edge of the tank that anybody could walk along and break it, we would bring that to their attention.

But I don't remember actually having that to be a problem. We particularly liked the ones where you actually, they are closed off. I can't think of the brand name, but you would open something up and it would come and it would tell you what the level is. And then you shut it off and the fluid drains back into the tank.

Q Then there is an entry called "Grounding."

Was that to reduce static electricity and the chance of a spark?

A Yes.

Q And then "Markings," what were the markings supposed to be?

A All of the tanks were supposed to have the product labeled so that anybody delivering or picking

up would know exactly what it is.

And also if a fire chief was coming on to the site, he would know what is in it. So we would be sure that those placards were on the tank.

The next page starts with: **[60]**

"Tank filling/emptying Connections (Top or Bottom.)"

What information was important to be put in there and why?

A We were looking, well, they wanted to know if it was off the top or the bottom, again, for the possibility of overtopping.

And also if the valves, if anybody could come along and, you know, if it wasn't a secured, I mean most of these had, you know, big fences around them.

But in some cases where we went to, they were not very well—they weren't very secure. So we want to make sure that they always have a lock so that only the employees would be able to open and close these things and get, have access to them.

Q Then the last entry on that page, well, the next entry says:

"Valves and Packing on Tanks."

What was important to collect there and why?

A. Well, we wanted to be sure that—there are many materials within these that would be corroded by D-D. I mean they are perfectly good for other agricultural chemicals, but D-D was very corrosive to certain types of things. So we verified that that was the right kind of packing material. **[61]**

And the other thing that we were worried about that they didn't have any kind of dripping or leaking. So we would go exercise where we could see there to

see that there wasn't any dripping going on. There had to be a positive seal.

Q You said you would go exercise. Is that what you said?

A Yeah, see if we could, if they looked to be in operating order. If they weren't hooked up to anything, we couldn't do it. But we always at least, wherever it was, if you had a quick connect or quick disconnect, take it apart and look at it to be sure that it was the right material.

Q Then the next page, 071472, says:

"Transfer Equipment:"

And the first entry after that is:

"Piping, Materials, Joints, Screwed, Welded, Flanged."

What information were you collecting there and why was it important to your inspection?

A We just wanted a record of how the—usually it is talking about any pipe that leaves the tank and comes to a little pump.

There is a few quick cases where the tanks were elevated so they didn't even have to have a pump. I [62] mean they could just gravity flow into a truck.

But we were looking to find out, I mean you could—they were all legal to have either screwed, welded or flanged, but we just had a record of—I don't know why they wanted it, but I didn't take it there was any particular importance, other than they have a record of how it was done.

Q When you were looking at the D-D tank at these facilities where you were conducting these inspections, were you inspecting the plumbing so to speak that got the D-D into the tank as well as the

plumbing that got the D-D out of the tank?

A Correct, yes, we did.

Q The next entry is:

"Sealants/gasket materials:"

What did you need know there and why?

A Just to be sure that they didn't have devices—that they were of the approved material, primarily again for these quick connects. You can connect something and as soon as water—no—D-D flows through it, it's going to be leaking. We wanted to make sure that they knew. We were trying to make these as leakfree as possible.

Q And then there are:

"Hoses, Materials, Used for:" [63]

What information was important for your inspection?

A Well, we—

Q And why?

A We just noted the kind of hose materials, diameters and lengths, make sure they didn't have all kinds of excess links around.

Once the D-D flows through it, if you have all this stuff, 100 feet of hose or something, that you know there is actually material, it doesn't drain out of there.

So that we were just making sure they didn't have a lot of that stuff laying around, because somebody would pick it up later and, you know, how it will dribble out on the ground.

Q And what was the procedure that was recommended by Shell to be followed in that circumstance?

MR. EARLE: Objection, assumes facts not in

evidence.

THE WITNESS: I don't know.

Q BY MR. LASATER: You can go ahead.

A I don't know.

Q From your review of the manual and communication with Shell personnel, what did you understand was Shell's position in that regard?

A I don't remember. **[64]**

Q Now it says:

"Electrical bonds established."

What is that about?

A I don't remember.

Q And it says:

"Valves easily accessible."

What was that about?

Is that just a physical thing that you could get to them to shut them off?

A Yes.

Q The next line is:

"Valves & packings used in transfer system."

Was this simply to record the information or was there certain kinds of valves and packings that were not suitable for use with D-D?

A Yes, there were certain ones that were not suitable. And we would check to be sure that they were okay.

Q Now, if they weren't suitable in this example, but it probably applies to some of the others, but in some example you found something that wasn't suitable, there are spaces provided for what you found, how would you note that it wasn't suitable?

A Usually in the transmittal in the end, you

know, when we delivered the final report. [65]

Q And "Packing materials," what does that refer to? Is that like valve packing?

A Yes.

Q Now, "Meters—descriptions," what were the meters?

A Well, it was usually an in-line device that spun as the fluid flowed through it so that you knew how many gallons was being loaded.

Q And then there is a "Filters—description" entry. And what was that about?

A If they had a filter on the transfer equipment or not, we would note what kind it was, same with the strainer. They kind of go hand in hand.

Q Was there supposed to be a filter or a strainer?

A There didn't have to be, but most of the places as I did recall did have either one or the other.

Q In the next page starts with "Hose connections," and then, quote, "Dry," close quote, disconnects—description."

And then the next one is "Quick connects—description." What were you looking for here?

A Just to determine that they actually had them.

Q Would you describe the difference between a dry disconnect and a quick— [66]

A Connect.

Q —and a quick connect?

A I don't recall, but I believe that the dry disconnect is, you had, there would be no fluid in the line. A valve was somewhere—I don't recall.

Q Do you remember that there were other kinds of connects or disconnects that were in use but which

were not what Shell wanted to be used?

MR. EARLE: The question is vague and ambiguous and has no reference as to time or place. Are we talking about in general or Shafter or Arvin or—

MR. LASATER: I am talking about in this period of time that he was doing these inspections.

THE WITNESS: I don't recall.

Q BY MR. LASATER: The next entry is:

"Pumps, Loading bulk storage, Unloading bulk storage," and so on.

What information was important to collect for this form and why?

A Well, we just noted all of the information about the pump equipment that was being used for this process.

I don't think that we ever really found a problem with the pump. I mean we just want to make sure that it wasn't corroding and it worked for the purpose. [67]

Q And then to the last page of this exhibit, it says, "Truck/Tank Car Station," and then "Hard-stand."

What did that mean?

A What they wanted, what they were looking for is that a truck, where they were putting this material or conveying it to a truck that it had an impervious surface, that it wasn't just being done like you say on the gravel, that in fact they were supposed to be when a truck was alongside the tank or as close to the tank as it could get while it was being transferred, that there actually was a hard stand material which to them means like concrete.

Q Did it need to be impervious or was it some

term that was less than impervious by saying "hard-stand"?

A We interpreted it to be impervious.

Q And then the next entries or the last entries say, "Barricades and warning signs."

What was that about?

A I don't recall the importance of that.

Q Then it says:

"Grounding/bonding cable and clamp."

Was that to reduce static electricity?

A Yes.

Q And then the next is "Spill containment."

That is something that is actually dealt with earlier, isn't it? [68]

A Yes, it is, but I think that this spill, containment pertains to the truck area as opposed to the bulk storage area.

So we wanted it—I mean sometimes the trucks could drive into the area, you know, down into where there was big bulk storage facility. And they would come into a ramp and then be loaded and unloaded and then drive back out. So the truck and the tank storage was all protected.

But in other cases, this is probably one of them, but I can't remember. You know, the tank is sitting throughout and probably not with any containment. And the truck area might be somewhat over here or in a case even if you did have a tank that had containment, but just a paved area side by side that was outside of that diked area, they would say, hey, that needs to be protected also, because the truck can spring a leak, too.

MR. EARLE: Move to strike the witness' answer

after "but in other cases, this is probably one of them, but I can't remember" as speculative, lacking foundation.

Q BY MR. LASATER: Are you doing any work for Shell Oil Company or any of its affiliated companies today?

A Not that I am aware of.

* * *

[103]

Q. Do you recall whether or not you reviewed the entire manual.

A. Yeah, actually I did.

Q. That was your assignment?

A. That was my assignment, before I made a budget up because I knew I was going to have to do it over and over and over. And I didn't want to lose a ton of money.

Q. Was it your understanding that the tank that you were inspecting was to be at the facility was used for the Shell D-D?

In other words, was it your understanding one way or another whether or not the tanks that you were inspecting were used for Shell D-D and other products or was it just Shell D-D?

A. No, only Shell D-D. In other words, I would go to a site and they may have a dozen tanks in the yard, I don't want to look at any other tank other than where they keep D-D. That was my only assignment.

Q. But it was your understanding, though, that the tanks you were inspecting were used to store Shell D-D?

A. Exclusively, yes.

Q. And Mr. Earle asked you about whether or not the Shell manual had as its purpose safety; correct? Do you remember that? **[104]**

A. Yes.

Q. You said yes. Did it also have a component of environmental protection as far as you can recollect?

A. I believe it was, but only as the existing environmental codes that were referenced in the back.

Q. But you didn't prepare the manual?

A. No.

Q. And you didn't have any discussions as far as you can recollect with the person who did prepare the manual?

A. I did not.

Q. So you don't really know what the purpose was of the author of the manual?

A. No.

Q. You jut knew what the manual said and that the company had to comply with it?

A. Right. They said we want you to fill out this checklist and, you know, look for the checklist compliance with our manual.

* * *

IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, et al.,	)	No. CV-F-92-5068 OWW/DLB (CONSOLIDATED ARVIN CASES)
Plaintiffs,	)	
-vs-	)	
BROWN & BRYANT, INC., et al.,	)	No. CV-F-96-5879 OWW (Consolidated Shafter Cases)
Defendants.	)	
AND RELATED ACTIONS	)	

THE DEPOSITION OF GEORGE MACK

before the undersigned Certified Shorthand Reporter, taken on behalf of the Plaintiffs, at the Ramada Inn, Ft. Smith, Arkansas, on MARCH 12, 1998, pursuant to Notice and The Federal Rules of Civil Procedure.

* * *

[56]

* * *

Q. Now, just to be clear for the record, from the west side—by the west side I'm referring to the area on Exhibit 687 which is to the west of grid H, vertical grid line H, west of that to where the fence line is indicated, is that what you understood me to mean by

west side?

A. That's right.

Q. Okay. Did you ever see any chemical spilled over there on the west side while you worked there?

A. Not on the west side. I would say near the 32 [57] tank, the Beebee 32 tank, liquid fertilizer tank, which is the biggest tank in the yard; the southwest, if you want to call it.

* * *

[59]

* * *

Q. Now, back to the west side. You mentioned the UN-32 tank, which is not on the west side, and a leak from it. Were there any leaks, spills, chemical releases over on the west side that you can remember?

A. If I remember right, some of that 32 had veered off in behind the welding shop and had not quite made it in behind the office there on the west side

Q. Is it fair to say that the west side was used for the purposes that you've already testified to; and that other than that, those uses, it wasn't used in ways that would produce spills or leaks?

A. No. No.

Q. That just is not what happened over there; is that right? [60]

A. No. Huh-uh.

Q. And you're saying no, meaning that that's correct?

A. That's correct. As far as I know, the almost four years that I was there, no, there wasn't any tanks, holding tanks of any kind, that I know of, that was over

there in that area that had ruptured or lines had broke or anything of that nature.

* * *

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA

THE ATCHISON,	:	NO. CV-F-92-5068
TOPEKA & SANTA FE	:	OWW/DLB
RAILWAY COMPANY,	:	(CONSOLIDATED
et al.,	:	ARVIN CASES)
	:	
vs.	:	NO. CV-F-96-5879 OWW
	:	(CONSOLIDATED
BROWN &BRYANT,	:	SHAFTER CASES)
INC., et al.,	:	

DEPOSITION OF ROBERT W. SWAIN

March 17, 1998 Houston, Texas

* * *

[104]

series of inspections found that not one of the customers visited had a totally satisfactory spill containment system." So by that, you're saying that the Brown & Bryant Arvin facility did not have a totally satisfactory spill containment system for the bulk D-D storage. Is that correct?

MR. HELDT: Objection to the form of that question.

A I don't think that's what it says. It says they didn't have an adequate or totally satisfactory spill containment system.

Q Okay. Would you then explain to me what that meant?

A Every one of the agricultural chemicals, products, fertilizers, insecticides, pesticides,

everything that they were handling in a liquid form could be inadvertently spilled or discharged onto the ground and could be flushed into, you know—off the property, if not contained. In that respect, they were not totally satisfactory. Not by my standards but by the California standards; by the EPA standards. I'm not sure that EPA was in existence then. Anyway, California certainly had some pretty stringent

* * *

[118]

* * *

A I don't really recall the situation at the time. I do know that they were given the D-D safety manual. My guess is that probably, without exception, most of these people did not read and retain and practice all of the suggestions that are in the D-D safety manual and the other codes and regulations that were referred to in the manual. People just don't read all of that stuff. They just go ahead and get the business done. It's not that it wasn't available to them. It's just that they didn't practice it.

Q Okay.

A Most of the people that we visited, it was a pretty competitive business. Most of these people were real entrepreneurs when they came to putting together a facility to provide the products and services that they sold. They didn't always follow the rules. They did the best they could in the cheapest way possible, and those conditions didn't always meet the standards [119] and regulations required. And that's a general statement. I'm not saying that this was true with Brown & Bryant at Arvin, but this is generally true with all the facilities I investigated.

* * *

[128]

* * *

Q Here on Page S003269, it says, in part, "When D-D spillage has been collected as above, proceed to decontaminate contaminated equipment and surfaces as follows," colon.

A Uh-huh.

Q "Wash down affected areas with a detergent solution and rinse with water," period. "Absorb waste water as above or drain it to a sump for future collection and disposal," period, end of quote. Was that your understanding, at least in part—And the paragraph goes on. Did you have that understanding as to that was the way contaminated equipment was to be decontaminated?

A You're referring to equipment?

Q Equipment and surfaces.

A As a part of equipment, it's probably the only way you can really do that surfaces. There's other ways in which that can be handled, such as putting containment facilities, a dike or whatever, around a tank, if that's the area in which they are concerned about spillage, having—loading the facilities or transfer facilities, I should say, set on a pad with a sewer system or a sump that will run it to a basin and then get [129] pumped into their holding pond to keep it from running off of the premises. A lot of these facilities, as we noted in the inspection report, is—again, reviewing it, I noticed that the tank was sitting on gravel. A lot of the other facilities that were inspected were sitting on gravel and all this would do is if there was a spill, would allow the D-D to percolate

into the ground. Washing it with detergent wouldn't have helped a bit. So I don't think that in my review of the facilities with Jack Brown, that we said anything about cleaning or following any of these procedures other than the fact that he should follow the D-D safety manuals.

Q Was it your understanding that Brown & Bryant had a sump where D-D rinseate could be collected?

A I don't recall that, but my guess was that they did not, but it was something that they were planning on providing as regard to that footnote on the inspection report, the typed inspection report.

Q Was it your understanding at this time in 1979 that waste waters containing D-D were regularly generated by distributors like Brown & Bryant as a normal course of their operations? **[130]**

A Waste waters containing D-D—Repeat the question, please.

MR. LASATER: Actually, I don't think I can. Will you read it back?

If it doesn't make sense, I'll redo it.

(The record was read by the reporter.)

A I don't recall that. But in the first place, one wouldn't mix water with D-D if there was a way of avoiding it. It's possible that there would be a D-D spill and rain could come around or somebody was washing down the facilities and there happened to be some residual D-D from transferring product from the storage tank into a transport vehicle where there might have been some spillage. That water, with a little D-D that might be in it at Brown & Bryant from, again, reviewing the inspection report 'cause I don't

remember the specifics, probably would have run off the property at the time that I made the visit because I don't recall that they had a collection facility there at the time. Again, I can only surmise that from our discussion following my inspection and the review with Jack Brown, that this is something that he was going to have to put in as required by the Water [131] Quality Board.

Q Now, you indicated that washing down with water would not be—I don't know that that's what you indicated. You indicated that you wouldn't typically put water with D-D if you could avoid it.

A If I—That's correct.

Q Okay.

A I would absorb it using kitty litter or calcium chloride or—There's a lot of things that you can use to absorb hydrocarbons and then pick them up and then you don't have to worry about the contamination so much or at least you're going to grossly indilute it. Just mixing it with water just makes it that much more difficult to handle and dispose of.

Q We've had testimony in this case that Brown & Bryant's procedures were such that they had a two-thousand or a twenty-five-hundred-gallon-tank truck that they would use to transport D-D to the fields to put into a nurse tank. And that at times, they wanted to handle or transport a different liquid in that truck, and they would wash out that truck and put it into a sump that they had on site so that they then could put the [132] other fertilizer or chemical or whatever in there.

A Yeah.

Q Were you ever aware that Brown & Bryant had a procedure like that?

A No.

Q Were you ever aware that that was a kind of procedure that other agricultural chemical facilities that you visited over your career utilized?

A There were all sorts of facilities out there in order to collect spills and what-have-you. By and large, most of the facilities that I visited had no adequate protection with the handling of spills. Most of them just let them percolate in the ground. And that was one of our concerns in this business because most of these were just bare-bones operations and they allowed this to happen. Most of them were in rural areas and after all, it's D-D. What do you do with the product, anyway? You inject it into the soil. That's the commercial use of it. It's to kill nematodes, so why not let it spill on the ground and kill the damn nematodes?

Q Would be very sure there were no nematodes on [133] that site.

A Well, I've heard of people using D-D as a weed killer. Well, let's face it. It's, basically, like diesel oil, anyway, and people used to go along the road and spray diesel oil on there and kill all the weeds. And that was a good way of getting rid of their contaminated D-D. It wasn't recommended by Shell, but then a lot of things that we recommended weren't followed.

Q You were talking about spills and how, in fact, it was your experience that spills were handled. When you were talking about spills, were you including in there that concept that I referred to of washing out one tank truck in order to put a different product in there?

A No. My concern in looking at that facility, primarily, again, in referring back to the inspection report which was—I don't know. Where'd it go?

MR. HELDT: Over here, 1030.

THE WITNESS: Yeah, 1030.

A Most of it was to contain spills that occurred either in the transfer of product or the major concern with what happened to the product in the storage container. Some of the things that they [134] were doing with their storage container, as you will see by reading the report, that were very potentially hazardous. They had nothing more than a hose going up from the top to the bottom of the tank and if anything happened to that hose, either because it became old and brittle or it was accidentally pulled off of the bottom connection, it would have evacuated the whole tank. The problem there is that that spill—gross spill of D-D, for instance, there was just no way to contain it. It would run off the property and contaminate everything on down.

Q Right.

A That certainly was a concern to us and a concern to them. They needed to do something about it. So we made recommendations as to what they could do and there were many options to that, to put in a different type of level device so that they can determine what the volume was. You certainly don't want them to overfill the tank. The other one was, well, the—what if they did, then what do you do about it? Well, we suggested that they put a berm around the tank to contain it so if there was a spill, it would only affect the ground immediately around the tank and wouldn't

* * *

[186]

* * *

Q Do you recollect what was done with respect to catching spills, if any, that were part of the transfer process both in and/or out?

A There's usually very little spill that can occur, but they always do happen. There's a few drips that are lost or whatever. One way of doing it is when the transport vehicle—it can be a railcar, it can be a tanker truck or whatever. [187] —comes in and he connects his hose from his storage tank to a pump, which then pumps it into the customer's storage tank. Again, liquid won't flow uphill, so you need a pump in the operations. In making this transfer, then, 'cause, usually, a valve on the end of his hose that connects to the valve on your tank, you open up both of them, but there's still a little space in there where product can get trapped. And when you break the connection so that you can move the umbilical cord from the truck and get him going on his way, there's probably a little drop in there. Frequently, it's collected in a little bucket or pan and disposed of, if it's done properly. Most often, though, back in those days, just let it dump on the ground.

* * *

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA
AT FRESNO

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, et al. Plaintiffs, vs.	)	
BROWN & BRYANT, INC., et al., Defendants.	)	Case No. CV F-92-5068
AND RELATED ACTIONS	)	

DEPOSITION OF

DAVID REA

GLENDALE, CALIFORNIA

SATURDAY, MAY 2, 1998

* * *

[208]

* * *

Q. Do you remember that part of the bulk facilities improvement program was a requirement that there be dry disconnect valves for transfer valves?

A. I do.

Q. And what was your understanding as to what those dry—what was entailed in the dry disconnect

valve? [209]

MR. EARLE: The question is ambiguous as phrased.

MR. LASATER: Let me restate the question.

Q. What was your understanding about the requirement for dry disconnect valves?

MR. EARLE: The question is overbroad, calls for a narrative, and it's ambiguous.

If you can tell.

THE WITNESS: He gets the narration version then.

Dry disconnect valves were used to minimize spill or release of product upon hoses being disconnected.

I can't tell you how many grams of product that meant that would be in tolerance. I can't remember that.

I just know I remember that, through the State of California, the regulators were demanding dry disconnect fittings for filling helicopters and fixed wing aircraft to discharging all kinds of products.

BY MR. LASATER:

Q. Do you remember that the bulk [210] facilities improvement programs requirement for dry disconnect valves referred to the disconnect of the hose that went from the tanker truck which delivered the D-D to the customer site from the customers' tank?

A. I do.

Q. Do you remember that the dry disconnect requirement also applied to disconnects when the customer was taking or had taken D-D out of the bulk tank and -- well, when they were disconnecting from having taken out from the D-D tank?

A. Yes, it was.

* * *

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, et al.,	)	
Plaintiffs,	)	
vs.	)	CV-F-92-5068 OWW/DLB
BROWN & BRYANT, INC., et al.,	)	
Defendants.	)	

DEPOSITION OF WILLIAM PERKINS

BE IT REMEMBERED THAT the deposition of WILLIAM PERKINS was taken on behalf of the Plaintiffs before Jann Nichols, a Notary Public, on Tuesday, May 26, 1998 beginning at the hour of 10:30 a.m. at the Jackson County Airport Authority Building, 3650 Biddle Road, Suite 13, Conference Room C, Medford, Oregon, 97504.

* * *

[12]

* * *

Q. Now, what else was washed into this sump that you've referred to? [13]

A. Well, everything that they ever drained out of

any tank went into it. They didn't spare anything. Nemagun, DD, whatever, it all went in there.

Q. You mentioned Nemagun. What was your involvement with Nemagun?

A. Well, I injected quite a bit of it in the fields for cotton and things like that. It was mainly used on cotton to kill nematode.

Q. And what was the container that the Nemagun come in?

A. If I remember correctly it came in five-gallon containers made out of metal and it was a clear liquid and weighed about three or four times what water would way. Extremely heavy.

Q. And did any of that get washed into the sump?

A. Well, I imagine it did when they washed out the lines that carried it from the pumps to the injectors when we put it in the ground. Now, the containers when they were emptied before they had the landfill out there near Arvin we took them out there and just threw them out and burned them.

Q. Threw them out where?

A. At the dump grounds. Would be west of Arvin about four miles on Way Patch Highway.

Q. And these lines, were these the lines on the [14] tractors that you were driving?

A. Right, they came from the, you know—they dripped it into these little injector tubes. They had things that went down into the ground, that it was injected into the ground under pressure, a slight amount of pressure, didn't need much because the stuff was so heavy. Then when we got back there was still some in the lines, so we just flushed it out and it went into the hole, the sump hole.

Q. When you say got back, do you mean get back to the Brown & Bryant Arvin yard?

A. Right, from the farm or wherever we was using the stuff.

Q. When you were driving tractors while working for Brown & Bryant, were those Brown & Bryant tractors?

A. They were leased. Who they leased them from, I don't know. All of their trucks and everything were leased. They had all Dodge trucks and they were all leased. Now, we had Ford tractors, Ford 6000s that we used, and we had some Ford 500s. I believe that was a smaller tractor that we used for putting fertilizer and pesticides and stuff like that out.

Q. So after the tractor was used at the farmer's field, you'd bring it back to the Arvin yard, the Brown & Bryant yard? [15]

A. That's correct.

Q. Do you ever remember DD being—do you remember any DD in the Brown & Bryant yard that was in 55-gallon drums?

MR. EARLE: Can I have the reporter read that back?

MR. LASATER: Let me restate it.

Q. (By Mr. Lasater): When you worked at Brown & Bryant did you ever see DD on site in containers, smaller than 55 gallons? Fifty-five gallons or smaller?

A. Well, I saw some stuff like that in 55-gallon drums but I never—I don't recall ever seeing anything in any container any smaller than that. They had so much stuff there that—gosh, this has been years. I just can't remember all of the amount of junk they had there.

Q. Was some DD present at the Arvin site in 55-gallon drums—

A. I'm just not—

Q or do you remember?

A. I'm just not sure. I can't really remember how they brought that stuff in there. It's just they had so much in that warehouse that it was unbelievable. [16] Now, I've never hauled any of it in drums, so I'm not sure.

Q. Okay. How about a product called Telone. Did you ever have anything to do with a product with that name?

A. Well, if I knew what it was used for. Like I say, my memory of those times is—

Q. Okay.

A. I was p.o.'d most of the time that I worked there anyway because I had to handle that crap.

Q. Oh, I see.

A. How do you spell that?

Q. Some people called it Telone, T-e-l- —

A. — - o-n-e?

Q. Yes, Telone.

A. Well, it sounds familiar. It was probably in 5-gallon cans, wasn't it?

Q. I don't know, and it was a product that was similar to DD is my understanding.

A. Well, that must be what—that's what we used on the tractors for injection on cotton and things like that.

Q. Let me ask you, looking at this grid map again which is Exhibit 687 and you see the area to the west of the warehouse, to the west of the vertical line [17]

"H"—

A. It says "covered storage"?

Q. Right. The area to the west of that, up and to the rail lines there, do you see where I'm indicating?

A. Yes, I do. That's an H on the grid.

Q. H on the grid. West of that H.

A. It would be H6.

Q. Right. Now, was any of that property out there used? It was—it's also shown on this overhead photo which is Exhibit 242.

A. That's the area to the west?

Q. Right, it's the area to the right of the large building in that photo.

A. Yes.

Q. Did—while you were there was Brown & Bryant did it use that area at all?

A. No.

* * *

[19]

* * *

Q. Was there equipment stored to the west? [20]

A. No, not when I worked there there wasn't.

Q. So the west of the warehouse and this maintenance building, that was not used?

A. Not when I was there, no.

* * *

IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY,	)	
Plaintiff,	)	
-vs-	)	No. CV-F-96-5879 OWW/DLB
HERCULES, INCORPORATED, et al., Defendants.	)	

DEPOSITION OF RICHARD S. WOOLLEY

Glendale, California May 27, 1998

* * *

[135]

* * *

Q. In the typed-in portion in the lower half of this form, where it says 5000 gallons, D-D, [136] and then there is a letter, and then it says soil fumigant, do you see that?

A. Yes.

Q. And right below it it says less evaporation allowance. Do you see that?

A. Uh-huh.

Q. Do you remember what the evaporation

allowance was?

A. I don't. There was one because it's a volatile material.

Q. And there was an evaporation allowance at the time that you were district manager?

A. As far as I recollect.

Q. What was your understanding of how that allowance operated?

A. I can't tell you the particulars. But being a volatile product, it was—it seemed to be a necessary adjustment for the customers.

* * *

IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA
HON. OLIVER W. WANGER

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, et al.,	NO. CV-F-92-5068 OWW
Plaintiffs,	USA's Motion for Summary Judgment as to ATSF; DOT's Motion for Partial Judgment as to ATSF
vs.	
BROWN & BRYANT, INC., et al.,	
Defendants.	
AND RELATED CROSS-CLAIMS AND THIRD PARTY ACTIONS	

Fresno, California Monday, October 26, 1998

REPORTER'S TRANSCRIPT OF PROCEEDINGS

* * *

[87]

* * *

THE COURT: Let's look at divisibility cases that were just cited.

MR. MacAYEAL: Okay.

THE COURT: And let us assume, because this is

my assumption just by looking at the evidence in gross. This less than 10 percent, probably less than 5 percent of anything [88] that has been released on the leased property compared to what has been released on Brown & Bryant's property, owned property, through the years that would contribute to the groundwater problem or the threatened groundwater problem, and so if we are looking at the Restatement, you do not assign at this stage as a matter of law 100 percent joint liability to the railroad.

Mr. MacAYEAL: So we are assuming that only 10 percent came from the railroad parcel.

THE COURT: I think based on what Mr. Brown testified to and knowing what their operations were compared to, in other words, nobody has tried to give us, like gross estimates of how many millions of gallons were stored in containers or stacked in drums or what was spilled and what wasn't spilled, that kind of stuff, but we know on the other property that you have got, basically, a fabricating site where you are mixing, you are crushing, you are basically taking the ingredients of the agricultural commodities, I should say chemicals, and are putting them into package and a form for transportation, some are in bulk, and that obviously is going to be unquantified, but there is a lot more there on property for which Brown—I should say for which the railroads under CERCLA don't have liability compared to what is going on on their property that they have contracted to permit Brown & Bryant to conduct its activities.

* * *

IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA
HON. OLIVER W. WANGER

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, et al., Plaintiffs, vs. BROWN & BRYANT, INC., et al., Defendants.	NO. CV-F-92-5068 OWW Court Trial, Day 1 Testimony of Lonnie Merryman
AND RELATED CROSS-CLAIMS AND THIRD PARTY ACTIONS	

Fresno, California Tuesday, March 30, 1999

REPORTER'S PARTIAL TRANSCRIPT
OF PROCEEDINGS

* * *

[8]

MR. MacAYEAL: I will call the witness, your Honor. Your Honor, the government calls Lonnie

Merryman.

LONNIE MERRYMAN,

called as a witness on behalf of the Plaintiffs, having been first duly sworn, testified as follows:

THE CLERK: Please state your name and spell your last name for the record.

THE WITNESS: Lonnie Dean Merryman. My last name is M-E-R-R-Y-M-A-N.

THE CLERK: Thank you. You may take the witness stand.

THE COURT: You may proceed.

DIRECT EXAMINATION

BY MR. MacAYEAL:

Q. Mr. Merryman, were you ever employed at Brown & Bryant in Arvin?

A. Yes, sir.

Q. When did you start there, roughly?

A. It was either '72 or '73, and I worked until '81.

Q. Were you out there in the yard in Arvin?

A. I worked a little bit in the yard. Mostly I was field service.

Q. Field service?

A. Yes.

Q. Tell us briefly what you do and what field service [9] involved.

A. Field service was as a serviceman, we would—salesmen would go out and sell the material and then we had a full service operation. We would go out and mount the tractor, put the equipment on to apply, or whatever, to apply whatever it was they were putting on.

Q. Fumigant or whatever?

A. Fumigants, insecticides, pesticides, whatever.

Q. Are you familiar with the term of a bobtail?

A. Yes.

Q. What is that?

A. Bobtail were the trucks we handled to handle the fertilizer, the fumigant, to haul it from the plant to the field.

Q. Was there a tanker called a nurse tank?

A. Yes, sir. That's what the bobtail carried it in when the salesmen or tanker drivers would take the nurse tank to the field. They would fill the material in it and then we would nurse out of it to either tractor tanks on tractors or pull rigs.

Q. What was the capacity of the nurse tank generally?

A. Field service, it would hold—we had two sizes. One was 2,000 gallons; one was 25 or 26—I'm sorry, 2,000 gallons and 25- or 2600 gallons.

Q. That tank would be stationed out at the farmer's field? [10]

A. Yes.

Q. Material from that would go into another tank?

A. Yes, sir.

Q. And then to get the material out to that nurse tank, you would use the bobtail?

A. Yes, sir.

Q. What was typically the size of the bobtail in terms of gallons?

A. I believe it would hold 1800 to 2,000. I'm not sure.

THE COURT: There was a tank on the bobtail?

THE WITNESS: It was a 2,000 or 1800 gallon tank

mounted on a two-ton truck.

BY MR. MacAYEAL:

Q. Was it a tank or truck?

A. Yes.

THE COURT: When you say the nurse tank was stationed in the fields, did you move it into the field?

THE WITNESS: Either the serviceman would move it or the tanker driver when he took out the material. Sometimes the servicemen would spot him in the field and call the order in.

THE COURT: Otherwise, where was it kept?

THE WITNESS: Inside the yard at Brown & Bryant.

BY MR. MacAYEAL:

Q. Now, you personally were taking these tanks out there, correct, you were a serviceman? [11]

A. Yes, sir.

Q. And later on, you became the manager?

A. I became the service manager the last year, two years I was there.

Q. Okay. And when did you leave Brown & Bryant?

A. '81.

Q. Did you have occasion to go visit Brown & Bryant after you left their employment?

A. Yes, sir. The company I went to work for, Kisco Sales, K-I-S-C-O Sales, Incorporated, we sell spray and fertilize equipment, and they were one of my customers after I went to work for them.

Q. You would go back to Arvin plant and try and sell the products that Kisco sold?

A. Yes, sir.

Q. To Brown & Bryant?

A. Yes, sir.

Q. Now, could you tell the Court—are you familiar with the term "D-D rig"?

A. Yes, sir.

Q. Could you tell the Court what that is?

A. A D-D rig, I presume he's talking about the pull rigs?

Q. Yes, sir.

A. That was a unit that had two wheels on it with a tongue. It had anywhere from 14 to 16 shanks on the back and then it [12] had about a 500-gallon tank that we put the material in. They would pull this apparatus through the field behind the tractor and that would inject the D-D into the ground for fumigation. They call it solid fumigation.

Q. The D-D rig had tines that dug into the ground like a fork?

A. Yes, tines, shanks.

Q. Those had hoses that allowed the fumigant to be sprayed?

A. Yes, sir.

Q. Now, did these D-D rigs—you have familiarity, correct?

A. Yes.

Q. You took them out in the field?

A. Yes.

Q. Did these D-D rigs have any filters on them?

A. Yes, sir.

Q. And what was the reason for the filters?

A. To keep any sediment or trash out of the orifices, to keep them from being plugged up.

Sometimes the D-D, or whatever material it was, would have settlements of rust or pieces of hose that came apart. The big filter would catch everything coming out of the tank going to the pump. We had a smaller three-quarter inch filter that came out of the pump going back to a manifold. That manifold would feed however many shanks we had on the back. Each one of those tubes would have a small in-line orifice body with an orifice and a small strainer in it. **[13]**

Q. Let me go through that again. Now, when the D-D goes out in the field, would there be dust generated when it was being dragged around?

A. Yes, sir.

Q. That was a concern as far as that material getting inside the tank?

A. Right.

Q. When—was there a filter on the bottom of the D-D pull rig?

A. Yes, sir.

Q. What was that for, as far as you understood?

A. That was to keep the dust or sediments from the big tank getting through the pumps and plugging the orifice.

Q. That would keep the sediment from going out of the D-D tank into whatever was transferring into the D-D pull rig?

A. Yes, sir.

Q. And then you had another filter on top of the D-D tank?

A. Not on top of the tank. The tank was open. We would fill directly into it and then it would be strained coming out of the D-D tank.

Q. Was there some type of filter before it got to

the tines?

A. Yes, coming out of the pump there was a small three-quarter filter there also.

Q. You had a pump on the D-D rig that got the D-D into the tines? [14]

A. Yes, sir.

Q. There was a filter on that pump?

A. Yes, sir.

Q. Down at the bottom of the tines were there filters as well?

A. Yes, sir, and every shank had its own filter.

Q. Okay. Now, before you took the D-D rig out to the field, did you have to make sure it was clean?

A. Right.

Q. And, in other words, if the filter were all clogged up, it would be—would it be difficult to fill the tank?

A. It would be difficult to take material out of the tank.

THE COURT: Did each shank or tine disperse material?

THE WITNESS: Yes, sir.

THE COURT: Thank you.

You may continue.

BY MR. MacAYEAL:

Q. Mr. Merryman, were the D-D rigs typically washed out?

A. Not usually. If it got real bad, full of a lot of sediment or something, we would wash them out. Usually when we finished an application of the job during our busy season, we would move it from one location to another and we just credit what material

was in the tank and charge to the other farmer.

Q. How would you know how much was in there?

A. They had plastic sight gauges or tubes on the end of the tank, hoses, and they were marked and calibrated in gallons and [15] you could check it that way.

Q. If the tank were half full, the sight gauge would read half full?

A. Yes, sir.

Q. And you applied D-D year-round, though, correct?

A. Yes, sir.

Q. And if there was residual material in the D-D rig out at the field that you were not transferring to another job, what would happen with that rig at that point?

A. If there was a small amount, like less than a hundred gallons or so, the servicemen would hook on for it, tow it back into the yard and park it in the lot.

Q. And that would be staged somewhere in the plant?

A. Yes, sir.

Q. Where was that?

A. In the early years, it was on the north end of the warehouse. In the later years, it was on the northwest and the west end of the warehouse.

Q. This is to the west of the warehouse?

A. Yes, sir.

Q. And that was after the fence got taken down in 1975?

A. Whatever year it was, yes, sir.

Q. And so did you have occasion to check out the

D-D rigs before you took it out on the job?

A. Yes, sir. It was easier to check them in the field, to [16] clean the filters and do everything there, but we did check them there.

Q. What happened from time to time when you checked the filter on the bottom of the tank, if anything?

A. In regards to?

Q. Was there any spillage?

A. Yes, sir.

Q. Were there any special nurse tanks that were devoted to D-D?

A. Yes, sir.

Q. How were they different from the other nurse tanks?

A. They had a different type of hose on it to handle the material, they were smaller hose. Other than that, it was the same.

Q. And were these tanks—the D-D tanks were not rinsed for the most part, the pull rigs, rather?

A. The pull rigs were not rinsed.

Q. How about the D-D nurse tanks, were they rinsed from time to time?

A. Whenever they were brought into the yard, if it was going right back out to another D-D job, they would hook onto it and take it back. If it was going to be in the yard for a while, they would clean it up and park it in the lot.

Q. Was there ever occasions you were aware of where not all of them got rinsed out for whatever reason? [17]

A. Yes, sir.

Q. Too many of them lined up?

A. Yes, sir.

Q. And were those staged over on the western side of the plant, west of the warehouse?

A. Usually when the servicemen brought it in, they would park it on the west side. It was easier to unhook.

Q. Was this a situation where you have to check the filters? Do these have filters?

A. Yes, sir.

Q. Was it important to check these filters on the tank as well?

A. If you were going to turn it right around and take it into the field and you decided to use another application, we would clean it there.

Q. There was a filter on the bottom of the tank that you would open up?

A. Yes, sir.

Q. You did it yourself?

A. I have done it myself.

Q. Was there any type of spills you experienced?

A. Yes, sir.

THE COURT: Where was the—you say that each time the rigs were brought in, the nurse tanks, they were checked, the filters were checked. Was that at the Brown & Bryant site [18] or in the field?

THE WITNESS: That was done inside the Brown & Bryant site when we brought them back in.

THE COURT: Even though you wouldn't rinse them, the filters would be checked every time the tank came in?

THE WITNESS: Right. Because you would have

sediment in it. It was easier to do it there than out in the field.

BY MR. MacAYEAL:

Q. If you had a clogged-up filter, would there be problems from having a clogged-up filter?

A. Right. Sometimes you couldn't get any material out of the tank or it would plug up the rest of the rig, so it was easier to take it apart, clean it there where we had hose and different ways of cleaning it or replacing it.

Q. Okay. Now, were any of the Bobtails—let me ask you this.

Do you recall a tank, a big bulk tank that was dedicated to the product D-D?

A. Yes, sir.

Q. All right. Now, do you recall a—was there a windstorm or some type of a storm—

THE COURT: Can we do this? How big was the tank for D-D only?

THE WITNESS: I'm not sure how many gallons it held. It would hold like two loads or three truckloads, which were [19] usually—

THE COURT: A thousand gallons, estimate?

THE WITNESS: No. When they delivered the D-D, I think it was probably—I'm speculating, but I think it was probably 4,000 gallons or so. So, in that area.

THE COURT: In your tenure from 72-73 until '81, was there always a D-D bulk tank?

THE WITNESS: No, sir.

THE COURT: So how long was there a D-D bulk tank?

THE WITNESS: Up until when we had the dust storm, it was either '77 or '78, I'm not sure what year it was, but that tank was destroyed.

THE COURT: And your earlier testimony that concerned nurse tanks, pull rigs and Bobtails, we are talking about that equipment being used only for D-D?

THE WITNESS: We had a special number of trailers that we used for just D-D. The Bobtails would be used for all materials.

THE COURT: Other materials as well. And how many units were devoted to D-D only?

THE WITNESS: On the nurse trailers?

THE COURT: Yes.

THE WITNESS: I can't remember the exact number. There was probably ten or so.

THE COURT: And D-D was used, to your understanding, [20] as a soil fumigant?

THE WITNESS: Yes, sir.

THE COURT: You may continue.

BY MR. MacAYEAL:

Q. Now, after that—you recall that the D-D tank was damaged in that windstorm?

A. Yes, sir.

Q. That was '77 or '78?

A. Whenever the dust storm was.

Q. Did the plant take, where—was there a place that you were aware of where they stored the D-D since they didn't have that tank? Where did they put it?

A. We had some large truck and trailers, a set of doubles, they call them. They were stainless steel tanks. Each tank would hold anywhere from 2300 to

2500 gallons. They were old converted milk trailers and we would use those. We used it—after we lost the big tank, we used it for temporary storage, and they would put those and use it during our busy season.

Q. When you load up the bobtail, it would be loaded up from that double tank, milk tank, is that what you call it, a milk tank?

A. Yes, sir.

Q. It was a stainless steel milk?

A. They were all stainless steel milk trailers that were converted. [21]

Q. There were two of them?

A. We had two sets, yes.

Q. And were those stored over on the western side of the warehouse?

A. They would be all over the yard. They would be on the west side, yes.

Q. Those would be used, then, to download into the bobtail?

A. Yes, sir.

Q. And, also, as far as you know, any deliveries coming in would be pumped into that tank?

A. As far as I remember, yes.

Q. Now, let's go back to you were at the plant before the parcel to the west of the warehouse was used?

A. Yes, sir.

Q. And there was a fence running up along the railroad track?

A. Yes, sir.

Q. To the west side of the warehouse?

A. Yes.

Q. And do you recall whether or not that fence was taken down at some point?

A. Yes, sir.

Q. Do you remember the precise year?

A. I couldn't tell you the exact year, no.

Q. Now, after that fence was taken down, was there anything done to that property out to the west of the warehouse as far [22] as grading or anything like that?

A. The first thing we did was remove the railroad spur that was ran alongside the warehouse. After we took the railroad spur out, then it was leveled. We had a drag that we drug around, leveled it out.

Q. Did you oil it?

A. Yes, sir.

Q. All right. Was it a common practice to oil that plant?

A. Yes, sir.

Q. What type of oil was it?

A. It's just regular road oil. They would have a truck come out and they would spray it on the ground.

Q. Did it have any type of hard material on it, like asphalt, or was it—

A. No, it was just like road oil.

Q. Okay. And you recall seeing that surface, correct?

A. That's correct.

Q. Throughout the year, would there be vehicles moved on that surface and other material stored out there?

A. Yes, sir.

Q. Now, did you ever recall any types of flaws or

cracks in that surface?

A. Yes, sir.

Q. What did that look like to you?

A. After they would oil it, we would let it sit for a week or [23] two until it pretty well dried or soaked in and then we would move equipment back over and store it there. They would move it with a forklift or one-ton truck and turning the wheels back and forth would always break out new dirt.

Q. You recall seeing that?

A. Yes, sir.

Q. When you did the oiling, would you do one side of the warehouse first and the other side of the warehouse?

A. Yes, sir.

Q. When that happened, what would you do with the material that was, say, on the side that you wanted to oil, what would you do with the things that were stored out there?

A. We would move everything to the other side.

Q. Now, do you recall whether or not that oiled surface on the west side of the warehouse, did that run all the way up—let me back up.

Was there a concrete apron to the west of the warehouse?

A. Yes.

Q. Now, do you recall whether or not the oiled surface ran all the way up and touched that surface?

A. No, you couldn't get the truck all the way up there. They didn't spray all the way to it.

Q. And do you recollect whether or not the site was graded in any particular way as far as rainwater

runoff? [24]

A. Everything was sloped to run to the southeast corner of the yard.

Q. There was a pond down there?

A. Yes, sir.

Q. And let me—

MR. MacAYEAL: Your Honor, may I hand the witness a document?

THE COURT: Yes, you may.

BY MR. MacAYEAL:

Q. I hope this shows up, but could you mark the letter "A" in the area that you had referred to as the pond.

A. (Witness complies.)

MR. MacAYEAL: Your Honor, I have marked a photograph as G-100, and may I show it to the witness and have him identify it, please?

THE COURT: Yes, you may. You can show it to him physically or put it on the Elmo.

BY MR. MacAYEAL:

Q. I have put G-100 on the Elmo so it's visible on the computer screens. Lonnie, can you see that?

A. Yes, sir.

Q. Now, I put an "A" down—first of all, what is that photograph?

A. I'm sorry?

Q. What does this photograph depict? [25]

A. It is the Arvin facility.

Q. Okay. Now, I put an "A" down on an area of that photograph. Can you tell me what was located at that particular location?

A. That was just a large sump area.

Q. That was where the facility, the plant drained down there?

A. Most all the—everything drained to that corner, yeah.

Q. Did you ever see water puddled up down there?

A. Yes, sir.

Q. Now, do you recall that there was a sump over on the eastern side of the plant?

A. I'm sorry, a sump on the eastern?

Q. Was there a big sump?

A. There was a large sump where that A area is.

Q. Some people called that a sump, but others called it a pond?

A. We called it a sump.

Q. Okay. Was there another sump that was connected with a rinsing location?

A. Yes, sir.

Q. Okay. And let me get you to identify where that is, please. I'm handing the witness Exhibit G-100. Could you write the letter "B," the general area where the rinsate sump was?

A. (Witness complies.) [26]

Q. Just for the record, on Exhibit G-100, you put a "B" down on the photograph, correct? Do you see that?

A. Yes, sir.

Q. What was in that location?

A. Originally, it was one large sump.

Q. Uh-huh.

A. And it had two wash racks, one to the north and one to the west.

Q. Now, in later years, was there an additional

sump placed to the south of that?

A. Yes, sir.

Q. And was that—can you put a time period on that? Was it in the 80's?

A. No. It was actually in the 70's. It's when we lined that sump in the back.

Q. Late 70's?

A. Yes, sir.

Q. All right. Now, prior to that time, was—let me back up.

Was there a time when the sump or the pond that is marked Exhibit A, was there a time that that was lined?

A. It was lined in the late 70's. Before then it wasn't.

Q. Okay. Now, in connection with that lining and the placement of the new—of the smaller sump in—let me get you to mark where that smaller sump is placed.

A. Be like the letter "C" or something? [27]

Q. Yes, C.

A. Okay. (Witness complies.)

Q. Thank you. Let the record show that you have put a letter "C" down on the photograph, correct?

A. Yes.

Q. That was where that smaller sump was put in?

A. Yes.

Q. Do you recall what that was for, that smaller sump?

A. At the time when we lined sump number A, we also—on number B, we put two small concrete sumps in there. That small concrete sump would drain to underground. We had a pipe that would drain to C to

catch all the sediment and then C would drain into A.

Q. C would capture the sediment?

A. Yes, sir.

Q. Did you install the pipes that connected B, C and A?

A. Yes.

Q. Do you remember when that was? Was that late 70's, early 80's?

A. It was in the late 70's when we lined that pump. I couldn't tell you what year.

Q. Prior to that was there any connection between sump B and the pond A?

A. Not that I'm aware of.

Q. Are you familiar with the product called Nemagon? [28]

A. Yes, sir.

Q. And when you were out there at the plant, was that something that was taken out to the growers' fields?

A. Yes, sir.

Q. And how did that come into the Arvin plant?

A. They would bring it in in 30-gallon drums and 5-gallon drums.

Q. Now, the 30-gallon drums, was there anything done to the 30-gallon drum before it went out to the field?

A. Sometimes, yes.

Q. Was it mixed with water?

A. Yes, sir.

Q. And how would that happen?

A. We would get one of the Bobtails. We would put water in it to an amount of mix that they needed,

we would weigh it, and we would back up and we would get a forklift, raise the drums up, open the lid and dump the drum into the top of the bobtail and mix it.

Q. And then you would transport it to the field?

A. Yes, sir.

Q. And apply it?

A. Yes, sir.

Q. What happened with that? After you emptied the drum, where would that drum be placed, if anyplace?

A. Before we got the property to the west side of the shop, it [29] was stored at the south end. I would have to show you.

Q. Let me have you mark, please, with a "D" where that area was that you just referenced.

THE COURT: Which of the drums were the ones that were used to mix 30- or the 5-gallon?

THE WITNESS: They were mostly 30-gallon drums.

THE COURT: Thank you.

BY MR. MacAYEAL:

Q. Now, on Exhibit G-100, you see on the screen where you have put down a "D"?

A. Yes, sir.

Q. What was that area before you went out onto the west of the warehouse, what was that?

A. That's where we stored all the drums, the 5-gallon cans.

Q. Let me back up. The 5-gallon, did you remember 5-gallon cans of Nemagon?

A. Yes, sir.

Q. How were those applied to the field?

A. They were mostly done with what they called a "dripolator." It was a device that you would open—on the drums there were two sizes, on the 5-gallon there would be like a two-inch and three-quarter inch. You would take the three-quarter inch plug out, you would screw this brass dripolator in. It would have anywhere from two to four outlets, sometimes even more, and then you would hang that upside down on the back of the tractor [30] and it would drip out to the shanks.

Q. What happened with the can after it was emptied, if anything?

A. We would bring it back in the yard and store them where that "D" is.

Q. Okay. Now, was there—from after you started using the property to the west of the warehouse?

A. Yes, sir.

Q. Was there a—did you have occasion to store drums out on that western area?

A. Yes, sir.

Q. Then did you store the Nemagon, the 30-gallon Nemagon drums?

A. Yes, sir.

Q. And these were the ones that had been emptied?

A. I'm sorry?

Q. These are the ones that had been emptied?

A. Yes, sir.

Q. Was there ever an occasion that that area where you marked as D got filled up with rainwater?

A. Yes, sir.

Q. And so what would happen? What would happen to the drums, if anything, that was stored

there?

A. Anything at that time would be stored over on the west side. [31]

Q. Now, what about Weed Killer D, do you remember that product?

A. Yes, sir.

Q. How would that product be applied out in the fields?

A. They would usually put it on with a spray rig, either the farmer's spray rig or else through tractor tanks, and then sprayed out with a hose.

Q. And was that a 30-gallon container?

A. I believe those were 55 gallons.

Q. All right. And—and so those were emptied out on the farmer's field, correct?

A. Right, it was either that way or, in some cases, it was brought out in bulk.

Q. But with respect to the 55-gallon drums, what would happen to the drums, if anything, after they were emptied?

A. We would bring them back in the yard.

Q. Where would you place them?

A. There again, in the early days, it would be down where D is. Later, it was on the west side.

Q. After the fence got taken down and you started using the west side?

A. Yes, sir.

Q. Now, do you recall you testified earlier about a concrete apron to the west of the warehouse?

A. Yes, sir. [32]

Q. All right. What was that used for?

A. Storage.

Q. Of what?

A. We would store mostly Weed Killer D and drums out there and 5-gallon cans out there.

Q. And did you also store that particular material inside the warehouse?

A. No.

Q. And why on—did you store some material in the warehouse?

A. Yes, sir.

Q. Was there any distinction between the two products to determine where one would be stored and where the other one would be stored?

A. The Weed Killer D was—if we ever had a problem with a leak or something, it was real messy. It made a mess. It was easier to keep it outside.

Q. Did you ever have occasion to see any leakage from any of those cans?

A. Yes, sir.

Q. What was done, if you recall, after the leak occurred?

A. Depending on what type of leak it was, the can would be picked up, redrummed into another container and cleaned up.

Q. Did you have a hose out there?

A. Yes, sir.

Q. Did you wash off the pad? [33]

A. Yes, sir.

Q. All right. Now, what I was trying to get at, was there some product that was stored in the warehouse, correct?

A. Yes, sir.

Q. Why the distinction? Was there a price—were

you concerned about theft of some product?

A. Yes, sir.

Q. Could you explain that?

A. The Weed Killer D was a product that nobody hardly ever would steal. It's low cost. Where Nemagon, Fumazone, Round-Up, all that was expensive.

Q. You would store that and the other products you just mentioned inside the warehouse?

A. Yes, sir.

Q. But the dinoseb was outside on the apron?

A. Yes, sir.

Q. Now, do you recall the—did Brown & Bryant have company barbeques from time to time?

A. Yes, sir.

Q. Did you ever have any inside the warehouse?

A. Yes, sir.

Q. Were any steps made to clean out that warehouse before the barbeque?

A. Yes, sir.

Q. What was done? [34]

A. We would go in a week before the barbeque, we would empty the warehouse out, take all the material out. It would be swept and then hosed out.

Q. And would it be hosed out in the direction of the west?

A. It would go out all three doors or four doors.

Q. There was a set of doors to the west—

A. Yes, sir.

Q. —of the warehouse building?

A. Yes, sir.

Q. Now, you were out in the yard quite a bit, weren't you?

A. Yes, sir.

Q. All right. And a lot of what happened out there is the transfer of liquid material; is that correct?

A. Yes.

MR. LASATER: Objection, vague, your Honor, and leading.

THE COURT: All right. The objection is sustained.

BY MR. MacAYEAL:

Q. Did you ever have occasion to see any transfer of liquid material from one container to another?

A. Yes, sir.

Q. Can you tell us what that was?

A. It was all types. It was—it was trucks unloading material into storage tanks, it was Bobtails loading out of storage tanks, it was rebottling materials into drums, a lot of [35] different materials.

Q. Now, did you ever have occasion to see any leakage from that?

A. Yes, sir.

Q. Was that a rare event?

A. No, sir.

Q. Was it common?

A. Yes, sir.

Q. Was it common enough that you didn't particularly pay any attention to it?

A. Yes, sir.

Q. Now, did you ever have occasion to witness any tanker trucks downloading material into the D-D tank?

A. I have seen some in there. I seen all kinds of trucks unloading trucks.

Q. All right. Did you ever have occasion to see any materials transferred from a tanker truck where a bucket would be placed underneath the connection?

A. Yes, sir.

Q. All right. And did you ever have occasion to see—do you remember whether or not that was done in connection with the D-D tank?

A. That was all materials.

Q. And did you ever have occasion to see any spills with that type of activity? [36]

A. That was a common practice, yes, sir.

THE COURT: When you talked about leakage being common, on the transfer of materials from trucks to storage, from tanks out of storage and bottles to drums, where did the leakage go?

THE WITNESS: You mean like on the ground?

THE COURT: Yes, where did it go?

THE WITNESS: Yes, it would be on the ground.

THE COURT: All right. And when you talk about spills from all materials, including the D-D tank, where did the spills go?

THE WITNESS: When they were unloading, sir?

THE COURT: You were asked about buckets being under the connection.

THE WITNESS: Yes. When they were pumping off, we had a 5-gallon bucket we kept out there. When they got through unloading and unhooked their hoses, they would drain their hoses into that bucket and that bucket would be dumped back into the tank they were putting it in or into another storage tank.

THE COURT: Thank you.

THE WITNESS: You are welcome.

THE COURT: And the spills that you referenced, what were those?

THE WITNESS: Just about anything we had in the yard. [37] I have seen spills of one type or another, sir. It was quite a daily—

THE COURT: And where were those spills? In other words, what was the receiving point of the spill?

THE WITNESS: I'm sorry, I don't understand.

THE COURT: The material, assumedly, is spilling from a drum, a bottle, a tank, a bobtail and it spilled somewhere. Where did the spill go?

THE WITNESS: It would go usually on the ground. If the bobtail was loading something in the yard anywhere or we were cleaning something out in the yard, wherever that was, it would spill.

THE COURT: Thank you.

THE WITNESS: You are welcome.

BY MR. MacAYEAL:

Q. Now, after you left Brown & Bryant, you went to work for Kisco?

A. Yes, sir.

Q. And do you recall, did you ever have occasion to sell equipment to Brown & Bryant?

A. Yes, sir.

Q. Was there ever—do you recall one way or another whether you ever sold a pump to Brown & Bryant in connection with the D-D tank?

A. We sold them pumps and seals, yes. [38]

Q. And do you remember a particular pump that was placed on that D-D tank around 1981 or '82?

A. I remember them buying a pump from us for a D-D tank. I couldn't tell you what year it was.

Q. All right. Now, the area to the south, I'm talking about in reference to the western side of the warehouse, okay, to the south of that parcel.

A. Yes, sir.

Q. Did you ever see any flooding or ponding down in that area?

A. I would have to show you on the map.

Q. Let me hand you Exhibit G-100. Why don't you draw, if you can, the general area where you would see ponding in that southern part—

A. That would cover the whole south end of the map.

Q. Okay. Why don't we do it this way. After a rain, would it pond up down by the sump that you marked as A?

A. Yes, sir.

Q. All right. And would that be a different—would the water extend to different areas depending upon the rain event?

A. Yes, sir.

Q. Do you have in your mind, though, sort of a typical area that it would cover?

MR. LASATER: Objection, vague.

THE COURT: Do you understand the question?

THE WITNESS: I'm sorry? [39]

THE COURT: Do you understand the question?

THE WITNESS: Yes, sir.

THE COURT: Overruled.

THE WITNESS: It would. I'm trying to see how I can explain it. Let me see. On this map there is a large

tank just above—

BY MR. MacAYEAL:

Q. Let me put it back on the screen. Could you direct me, you are talking about this tank here?

A. Yes, sir.

Q. All right. Why don't we mark that—is that called the UN-32 tank?

A. That was a UN-32 tank.

Q. Why don't you put an "E" right in the middle of that.

A. (Witness complies.)

Q. Let the record show that I've handed the witness Exhibit G-100. And you have put an "E" down on that picture, correct?

A. Yes.

Q. What does that represent?

A. That was our UN-32 tank, and a flood would come all the way up. If you look at the white line right next to it, there is like a white line that runs all the way down towards C.

Q. Uh-huh.

A. The water would extend all the way up, even up to where—just below B where the white anhydrous ammonia tank was, just [40] south of it about 50 feet. That would all be under water.

Q. Let me mark the anhydrous ammonia tank, if you would, please, with an "F."

A. (Witness complies.)

Q. Let the record show that I have handed the witness Exhibit G-100. I have put an "F" down on that photograph.

A. Yes.

Q. What does that "F" represent?

A. That was the anhydrous ammonia tank.

Q. And you were talking about where you had seen water ponding?

A. The water would run all the way up to just about 50 feet from that tank just wide enough you could drive a bobtail through without being in the water.

Q. When you say "that tank," which tank are you referring to?

A. I'm sorry. The one that's marked number F.

Q. Would the water be north of that or south of that?

A. Be south of that.

Q. You say it was wide enough for what?

A. Wide enough where you can drive a bobtail before it got into the water. Almost to the tank.

Q. Okay. You talking about the depth?

A. Yes.

Q. And how high was that bobtail tank from the ground surface?

A. The bottom of the bobtail? I could only speculate. I [41] couldn't even guess.

Q. All right. Was it higher than your knees?

A. To the bottom of the truck, I would say yes.

Q. Now, was there a railroad spur running up along the warehouse?

A. Originally there was, yes.

Q. All right. During the time that that railroad spur was there, was there any type of drainage device from the west side to the east side underneath that?

A. No, there was nothing on the west side, just

dirt.

Q. In other words, was water—did water on the west side of the warehouse, was that channeled down to the pond?

A. Everything would go down to the pond, yes.

MR. MacAYEAL: All right. No further questions, your Honor.

Excuse me, your Honor. I would like to move Exhibit G-100 into evidence.

THE COURT: Any objection?

MR. LASATER: No, your Honor.

THE COURT: G-100 is received in evidence.

(Plaintiffs' Exhibit G-100 was received.)

THE COURT: Mr. Lasater, you may proceed.

MR. LASATER: Thank you, your Honor.

Mr. Merryman, I still don't think you can see that.

THE WITNESS: Not directly. **[42]**

MR. LASATER: Maybe we can work on this at the break, your Honor. At this point, if I can just have the witness be able to see it and your Honor.

MR. MacAYEAL: Your Honor, may I sit over here?

THE COURT: You certainly may.

MR. LASATER: I think we can, at the break, work out an easel system in the jury box.

THE COURT: All right.

CROSS-EXAMINATION

BY MR. LASATER:

Q. Mr. Merryman, how are you today? Ike Lasater. I said hello to you again.

A. Fine.

Q. I have put up here on this easel an

enlargement of what has been previously marked as Exhibit 689, that was the deposition exhibit and also the number that the railroad used to designate the exhibit.

So, your Honor, you have that available to you in a binder?

MS. BECKER: Excuse me, I believe it's 687.

MR. LASATER: 687, excuse me, I misspoke. We have a series of binders for the Court.

THE CLERK: They haven't been opened yet.

MR. LASATER: We will get them for you.

THE COURT: Fine. I can work off the large diagram [43] now.

MR. LASATER: So the government counsel will also have that as 687 in the binder.

MR. MacAYEAL: We have a copy of it?

MR. LASATER: Yes.

BY MR. LASATER:

Q. So with all of those logistics—

MR. MacAYEAL: Is this it? It doesn't have marking on it.

MR. LASATER: I'm not so sure on the Elmo with all those lines if it don't drive me to distraction.

BY MR. LASATER:

Q. Mr. Merryman, my question to you is whether this exhibit, 687, appears to you to be a reasonable drawing or aerial view map of what you have been calling the Brown & Bryant property and the west side?

A. Yes, sir.

Q. I'm going to use this grid map to identify some of the things that you have testified about here and at

deposition. First, if I might, the fence that you were talking about was a fence that ran approximately on the line, the fence that was removed, ran on a line, that is the H grid line, is that approximately correct?

A. Yes, sir.

Q. And so that fence, it ran actually from the northwest [44] corner of the warehouse on grid line H between grid 4 and 5?

A. I can't see the numbers from here, but—

THE COURT: The numbers are on the vertical axis and 1 is on the top going down to 31 at the bottom, which I understand to be the south.

THE WITNESS: Where it's marked right there "fence," that is where the line ran.

BY MR. LASATER:

Q. Okay. This drawing actually shows the fence as being a little bit out to the west from the warehouse. Is that actually the way you remember it?

A. Yes, sir.

Q. Okay. So that you could get—let me ask it to you this way. Was there a—this is different from the way I understood it, so let me rephrase it.

THE COURT: 12-G-4 and a half to 23-20, that's the fence?

BY MR. LASATER:

Q. Was it along the G grid line?

A. It was in that area, yes.

Q. Was there actually space to walk between the fence and the warehouse?

A. There was a set of railroad tracks that ran through there, so there was enough area to walk between there.

Q. And so the fence, as you remember it, was on the west side [45] of those railroad tracks that were—that ran north and south alongside the warehouse?

A. The way I remember it was, yes.

Q. Okay. And then at some point in time, Brown & Bryant leased this property to the west that you call to the west?

A. Yes, sir.

Q. And when that—and how did you find out about that?

A. When they told us to take the fence down and they put the other fence up along the railroad tracks.

Q. That was your supervisor, Mr. Turley?

A. Yes, sir.

Q. And then you and a crew went in there and you ran a drag over this property; is that right?

A. Yes, sir.

Q. And the property there is the western side of the warehouse?

A. Yes, sir.

Q. And you understood that to be railroad property?

A. Yes, sir.

Q. And would you describe the drag to the Court.

A. It was pulled behind a pickup or behind the tractor. It was like a piece of pipe with some chain on it, and there would be like a series of pipe and they would pull this across the ground and it would smooth it out and eliminate whatever weeds and rocks and stuff were there. [46]

Q. Did you ever have a grader in there or actually move soil to try to change the drainage at that time?

A. We had one of the farmers to the east of us, we borrowed his tractor with a scraper on the back and we scraped it.

Q. When you scraped it, what did you do?

A. Mostly—and then scraped where everything would drain back towards the back of the yard.

Q. And were there actually railroad rails in place next to the warehouse?

A. Yes, sir.

Q. And you took those out?

A. Yes, sir.

Q. Now, prior to these—this shift, and I believe you testified, but let me confirm, you are not certain what year that was?

A. I couldn't be exact, no.

Q. Was it your understanding at the time from your supervisors at Brown & Bryant that that took place right after the leasing of that property from the railroad?

A. Yes, sir.

Q. Now, before that lease took place and the activities you've just described took place, the activities of the Brown & Bryant Arvin operation took place on what you've described as the Brown & Bryant property; is that right?

A. Yes, sir. **[47]**

Q. And that property is shown on Exhibit 689 (sic) as the property that runs along grid line 1 starting at about G or H and runs to the east a little bit past X; is that right?

MR. MacAYEAL: Objection as to foundation, your Honor. This witness doesn't know the property lines. We have other witnesses who will say what the

property line is. I just asked him where west and east are from the warehouse.

THE COURT: I will let the foundation be established. I think you said "689" and my understanding it is 687.

MR. LASATER: First of all, that is correct. It is 687, your Honor.

THE COURT: You can lay the foundation.

BY MR. LASATER:

Q. Let me ask it this way to you, Mr. Merryman. You described the west side fence before Brown & Bryant leased the property from the railroad. Was there a fence in place along the north part of the property that you understood was the Brown & Bryant property?

A. Yes, sir.

Q. And did that run along grid line 1 from approximately G or H all the way to a little past X?

A. On that map, yes, that's where the fence ran.

Q. And then the east side fence ran where it's shown here almost along the X grid line a little bit to the east of the X grid line? [48]

A. That's where the fence was, yes.

Q. And then the fence before the lease, as shown at about G or H and 20, is a curved line that runs from there to the lower right-hand portion of this Exhibit 687; is that right?

A. Yes, sir.

Q. Okay. That's what you called the yard before the lease of the railroad property on the west side of the warehouse; is that right?

MR. MacAYEAL: Objection as to "that." I don't know what he means by "that."

THE COURT: Sustained.

BY MR. LASATER:

Q. The portion that you've described as being within those four fence lines, the southern, the eastern, the northern and the western, before the lease of the railroad property to the west of the warehouse, was that the area that you called the yard?

A. Yes, sir.

Q. And was that the area where Brown & Bryant conducted its activities before it leased property from the railroads?

A. Yes, sir.

Q. And the activities that took place in that area were the activities, among others, included rinsing out of these bobtailed trucks when they came back in after having delivered D-D to the fields? [49]

A. Yes, sir.

Q. And it included, upon occasion, rinsing out nurse tanks that had been used to store D-D?

A. Yes, sir.

Q. And it also was used for the rinsing out of the tanks in which the diluted Nemagon had been transported to and stored at the farmer's field?

A. Yes, sir.

Q. And the rinsing that you just referred to of D-D and Nemagon, that rinsing took place into the sump, which you've identified on the government's exhibit as, I believe, C. That's Government's Exhibit G-100 at B? I'm now handing you G-100.

A. Right, where B is.

Q. And at B on Government's G-100, there were two wash pads, one oriented north and south on the west side of that sump and one that was oriented east

and west on the north side?

A. Yes, sir.

Q. And those were organized to where you could drive a truck or a tank up onto a concrete pad; is that right?

A. Yes, sir.

Q. And there was a drainage hole in the pad?

A. Yes, sir.

Q. And that drainage went into the sump; is that right?

A. Yes, sir. [50]

Q. And that sump, up until 1979 or '80, was unlined?

A. Yes, sir.

Q. Meaning it just had an earthen bottom?

A. Yes.

Q. And approximately how deep was it?

THE COURT: You talking about the sump at B?

MR. LASATER: Yes, your Honor.

THE COURT: And the rinse pads were on the north and—

MR. LASATER: The west.

THE COURT: The west sides of the sump.

THE WITNESS: That's right, sir. As for the depth, I have no idea. It was deep.

BY MR. LASATER:

Q. And can you recall ever a time while it was unlined that there was not liquid in it?

A. No, sir.

Q. So it always had liquid?

A. Yes, sir.

Q. Can you give us the dimensions of this unlined sump that's been referred to as B on Government's G-100?

A. I couldn't be exact, but it was probably—it was a pretty good-sized sump. It was probably 35 by 35 foot.

Q. You say it was deep. Can you give us a range? It was deeper than a foot? [51]

A. It was deeper than 10 foot, I know.

Q. Prior to leasing the railroad property, was this the only area where Brown & Bryant rinsed out its equipment?

A. That's where we tried to do all of it, yes.

THE COURT: May I ask, what is the estimated time for the examination of Mr. Merryman?

MR. LASATER: Your Honor, I think given how it's going now, I have at least 45 more minutes.

THE COURT: All right. Then will Shell have some questions?

MR. EARLE: We have some questions, your Honor, yes.

THE COURT: It appears to me that we couldn't reasonably keep going. And I don't want to unduly detain you, Mr. Merryman, but we are going to take the noon recess now. We will resume at 1:30, and then it sounds like about an hour or so more.

THE WITNESS: That's fine.

THE COURT: We will stand in recess.

(The lunch recess was taken.)

AFTERNOON SESSION

1:30 p.m.

THE COURT: We are going back on the record in

United States versus Atchison, Topeka.

Mr. Lasater, you may resume your cross-examination.

MR. LASATER: Thank you, your Honor.

Initially, your Honor, I have here a binder that has some of the exhibits. Making sure of who is on first.

I also have provided for the witness what your Honor has just unfolded there, which is a smaller version of the enlargement of Exhibit 687. And then also underneath this, I will come to it in a minute, are Exhibits 1023, 1024, 1025 and 1027.

THE COURT: You want this exhibit in evidence?

MR. LASATER: Your Honor.

THE COURT: 687, is there any objection?

MR. MacAYEAL: There is an objection to the extent that there is some editorial comment on the document and it depicts the site as it was long after the witness had any dealings with it. I think he asked the witness generally does it look like the plant, and I think the witness said yes, but I just want to make it clear that the witness cannot lay a foundation for all these editorial comments about direct --

THE COURT: We will wait for the foundation.

BY MR. LASATER: [53]

Q. Mr. Merryman, looking at Exhibit 687, there in the center is an area that's entitled "dry sealed pumps with inspection door," and it points to a blackened area that's between grid lines 16 -- excuse me, between grid lines 17 and 18 and O and P. Do you see that?

A. Yes, sir.

Q. Okay. Now, that was -- is that what it looked like when that area was an unlined sump?

A. That's the same location, yes.

Q. It's the same location. The wash pad to the west is shown here as being from grid 18 up to midway between 17 and 18 and it is along grid line N; is that correct?

A. Yes, sir.

Q. And that was the wash pad that was there the whole time you worked for Brown & Bryant?

A. Yes, sir.

Q. And there is another wash pad that's to the north of that blackened area that I identified when you first began in this afternoon session, and that is between grid lines O and R and along grid line 16?

A. Yes, sir.

Q. And those were the two concrete wash pads that you testified this morning were where the equipment was pulled up to, they would be washed out, whatever was drained would be drained onto those pads, and from those pads there was a **[54]** connection into the unlined sump; is that right?

A. Yes, sir.

Q. And then sometime about the time that the pond in the southeast corner of the Brown & Bryant property was lined, at about that time, this sump was -- the unlined earthen sump was replaced with two concrete below-ground containers; is that right?

A. Yes, sir.

Q. And they were open at the top?

A. Yes, sir.

Q. And approximately what were their dimensions?

A. I would be speculating, but I would say they are probably 8 foot by 12 foot long and the depth was probably 8 foot.

Q. And were those -- there were two concrete boxes set side by side in the same place where the unlined earthen sump had been; is that right?

A. Yes, sir.

Q. And after those were put in up until the time you left Brown & Bryant's employment, did Brown & Bryant continue to use that sump with those concrete boxes as the washout area?

A. Yes, up till probably four months before I left, and we stopped using them altogether.

Q. And where was washout done at that time?

A. They would still try to use that same area, but we weren't able to wash the trucks. We used to do our cleanup on the [55] trucks and they weren't able to wash there, just the trailers.

Q. And by "the trailers," you mean the tank trailers?

A. Yes, sir.

Q. And by "trailers," are you also including the bobtail trucks that had the big tanks on them that were used to carry product to the farmer's field?

A. Right.

Q. So the operation of rinsing out the inside of the tanks continued up until the time you left Brown & Bryant's employment?

A. Yes, sir.

Q. And it happened at this area where it was first an unlined sump and then they put those two concrete boxes in?

A. Yes, sir.

Q. And the unlined earthen sump, you gave us the dimensions of that before lunch, and you said that it was at least 10 feet deep. I neglected to ask you then, I

ask you now, how much liquid would be in that unlined earthen sump typically?

A. It would be pretty full certain times of the year. It would be up to the very top. Other times, it would be down about 5 foot, 6 foot.

Q. Six foot from the surface?

A. Yes, sir.

THE COURT: And we are talking about the sump in the area of grids line 16, O through R, not the double -- what's [56] referred to as the double lined pond in the lower southeast corner of the property?

MR. LASATER: That's what I'm referring to, your Honor, but I will confirm it with the witness.

BY MR. LASATER:

Q. When I have been talking about the unlined sump that was then replaced with the two concrete boxes, were you referring to this darkened area on Exhibit 687, which is between grid lines 17 and 18 and between O and P?

A. Yes, sir.

Q. Now, we got off onto this about the sump when I was asking you what took place on the Brown & Bryant property before Brown & Bryant leased the property to the west of the warehouse.

MR. MacAYEAL: Judge, I would make an objection to the continued reference to the "Brown & Bryant property," because this witness does not necessarily have a foundation to know where the property line was.

THE COURT: Well, let's do this.

MR. MacAYEAL: If they want to identify it by fence, I have no objection, but there has been no foundation --

THE COURT: Let's determine this. Mr. Merryman, do you know of your own knowledge from the time you were on the property and as of the time you were on the property, if we take the area that is contained within [57] the grids on Exhibit 687, starting on the west with A and going to X on the east, and on the north going from 1 to 31 on the south, recognizing that there is that curve, do you know who owned that property during the period of time you were there?

THE WITNESS: I don't know who owned it, no. I know Brown & Bryant used that facility.

THE COURT: All right. And so we have talked about the fence coming down generally along on the vertical axis grid G. Did you understand that Brown & Bryant at some portion of time while you were there was using all the property within this grid after the fence came down?

THE WITNESS: Yes, sir.

THE COURT: All right. So let's just refer to this for now as the Arvin site, and that way nobody will have to be concerned about ownership until we get that into evidence.

BY MR. LASATER:

Q. Mr. Merryman, if I might develop a terminology with you. You identified area within the fence before the time Brown & Bryant leased to the west of the warehouse, and that was where Brown & Bryant conducted its operations; is that right?

A. Yes, sir.

Q. I'm going to refer to that as the Brown & Bryant yard.

A. Yes, sir.

Q. Okay. And then when I'm referring to the

property that was leased after you began to work for Brown & Bryant, that was [58] leased to the west of the warehouse, I will refer to that as the area west of the warehouse. Are we on the same page?

A. Yes, sir.

MR. MacAYEAL: Judge, I just want to make an objection for the record, because that's going to be extremely confusing when we actually do get a witness to say what the property line is. But if Mr. Lasater wants to define it in terms -- however he wants. I'm using different -- I'm using those same terms to mean different things, just so the record is clear.

THE COURT: I candidly would like it, if we could, for us to all agree on terms to designate these various areas of the property. Does anybody object to referring to the property within the western fence as the Brown & Bryant yard?

MR. MacAYEAL: I do, your Honor, because my understanding is the property line runs along -- the warehouse is on the property line, is what Jack Brown will testify to.

So—and, actually, that's where the railroad line was. Obviously, the railroad would own that, because there was a railroad line on it. So to call that area where there was a railroad line the "Brown & Bryant property," that is misleading. That area where that railroad track was was railroad property, and we can get a witness in who will lay the foundation for the property line. But I just think it's misleading when I have been saying west of the warehouse, I [59] mean if you can stand to the west of that warehouse, that's what I mean by that. So now Mr. Lasater is moving it over a couple of feet and I think it's confusing for the record.

THE COURT: All right. Well, then, let's do this. Let's, if we can, refer to the property. Would you agree to grid line H as the western boundary?

MR. MacAYEAL: That is the property line as we have heard, as the testimony, I understand it.

THE COURT: Let's refer to the property from grid line H to the east as the Brown & Bryant—I don't care if you call it "yard." You can call it anything you want. And for now, we will refer to the property to the west of that, going over to grid A, either as leased property or railroad property, whichever the parties prefer.

MR. MacAYEAL: Thank you, your Honor.

MR. LASATER: Thank you, your Honor.

BY MR. LASATER:

Q. Okay. I got to remember where I was. I'm trying to identify with some things that took place on the Brown & Bryant property or the Brown & Bryant yard before the property was leased from the railroad, the leased property came into use. You've identified activities that took place at the sump, which was first unlined and then lined. Now, also prior to leasing the property, there was a bulk D-D tank in the Brown & Bryant [60] yard; is that correct?

A. Yes, sir.

Q. And is that shown on this grid map or is this a later version of what was there?

A. That's a later version.

Q. Okay. Would you give us the grid coordinates of approximately where the bulk D-D tank was prior to when it was crushed in the windstorm?

A. Between 11 and 12 and P and Q.

Q. And this --

A. I'm sorry, that's between 12 and 13. I'm sorry.

Q. Between 12 and 13 and P and Q; is that correct?

A. Yes, sir, just east of where that C is.

Q. So there is a tank that is shown right along grid line P between 12 and 13 that has a C in it, which, according to the legend, says "lime sulfur"?

A. I'm sorry. I guess I'm talking about G, the one right there.

Q. So G on the legend, it says "mixer," but what -- regardless -- I'm just identifying what is on the picture.

A. Yes.

Q. What I'm asking you is are you saying that the --

A. Probably to be exact, it was halfway between B and C on that same grid line, they were all in line.

Q. The bulk D-D tank, prior to the time it was destroyed in [61] the windstorm, was between -- was on grid line P between 12 and 11?

A. Yes, sir.

Q. Now, I've referred to a windstorm. Would you describe what happened to the D-D tank in the windstorm?

A. It was totally destroyed. It was buckled in half.

Q. Approximately when was that?

A. I can't remember. It was '77 or '78, one of those two years.

Q. And do you remember there being any D-D released from that tank as a result of the windstorm?

A. I don't remember if there was any material in the tank at that time.

Q. Now, that tank held two or three tanker truckloads of D-D; is that right?

A. Yes, sir.

Q. And D-D was delivered into this Brown & Bryant yard at Arvin by these tractor-trailer rigs that were tank trucks; is that right?

A. Yes, sir.

Q. And as far as you know, D-D was never delivered by rail car; is that right?

A. Not to my knowledge, it never was.

Q. Now, these tractor-trailer rigs pulling a tank of D-D would pull into the yard and unload at the D-D bulk tank before the [62] windstorm?

A. Yes, sir.

Q. And those would contain approximately 5,000 gallons, or do you have another number in mind?

A. I couldn't tell you exactly. Somewhere between four and five.

Q. And the D-D bulk tank, as it existed before the windstorm, would hold at least more than 10,000 gallons?

A. Yes, sir.

Q. And it was during the delivery from these tractor-trailer rigs pulling a tank of D-D, it was during these deliveries that you personally saw D-D coming out of the hose coupling; is that correct?

A. Yes, sir.

Q. And there was a 5-gallon bucket that was used to try to collect those, but nonetheless, you saw D-D go onto the ground; is that right?

A. Yes, sir.

Q. And you saw at instances when that would

happen—you would see at least two gallons on the instances where you saw a fair amount come out?

MR. EARLE: Objection, your Honor. The witness is being led.

THE COURT: Sustained.

BY MR. LASATER: [63]

Q. How much did you see come out—did you ever see material come out of the couplings of these tractor-trailer rigs that were delivering the D-D to the bulk tank?

A. I have seen material come out, yes.

Q. Can you give us an estimate of the quantity?

A. It would be hard to say exact. I have seen sometimes just a few cupfuls, other times they would fill a 5-gallon bucket, no problem.

Q. And that would go on the ground?

A. Sometimes it would, yes.

Q. Now, in addition to before the lease of the railroad property—let me go at it this way.

There was also on the Brown & Bryant yard, there was an area where you stored—"you," meaning Brown & Bryant employees—stored empty cans of pesticides and herbicides; is that right?

A. Yes, sir.

Q. And those empty cans included 5-gallon cans that had formerly contained Nemagon; is that right?

A. There were some, yes.

Q. And that storage area also contained empty cans that formerly contained Brown & Bryant's Weed Killer D?

A. Yes, sir.

Q. Do you know that Weed Killer D contained a

product called dinoseb? [64]

A. I didn't know what the chemical name was, but it was something like that, yes.

Q. And that can storage area, at some point did it become—was a concrete pad laid down for it?

A. Yes, sir.

Q. Is that shown on Exhibit 687?

A. Yes, sir.

Q. Is it the area in the south part of the yard near the UN-32 tank that has an arrow to it with a legend that says "concrete can enclosure"?

A. Yes, sir.

Q. Before that concrete pad was put down, had the cans been stored in that same area?

A. Yes, sir.

Q. The empty cans?

A. Yes, sir.

Q. Now, when those empty cans were stored in that area, were they periodically, meaning every couple—every two to three months, did a crew of Brown & Bryant employees go out there and crush those cans?

A. Yes, sir.

Q. And did they use a hydraulic ram, like a log splitter, that would squeeze them down?

A. Yes, sir.

Q. And did you ever see any of the residual contents of those [65] cans go onto the ground?

A. Yes, sir.

Q. And approximately what size area would be affected, the ground area would be affected by the residues from these cans?

A. It would be larger than the area marked "concrete can enclosure." It would be about double that size.

Q. And so after they—after the can enclosure was created and the concrete pad that created it, did Brown & Bryant continue to crush cans in that area?

A. No, sir.

Q. Approximately when was that can enclosure created?

A. It had to be '79 or '80. I couldn't tell you exactly when.

Q. After Brown & Bryant leased the property west of the warehouse and began using it, did the wash rack and sump activities continue to go on in the Brown & Bryant yard where you've testified to them?

A. Yes, sir.

Q. Now, after you left Brown & Bryant's employment and as a result of your coming back because of your work with Kisco?

A. Kisco, yes.

Q. You learned that Brown & Bryant moved their rinse operations to the northern part of the yard; is that right?

A. Yes, sir.

Q. And is that area shown on here as the contained rinse system on Exhibit 687? [66]

A. Yes, sir.

Q. Did—after the leasing of the property to the west of the warehouse, did Brown & Bryant ever set up any kind of wash rack or sump on that property?

A. No, sir.

Q. Now, the—did Brown & Bryant ever set up a

can crushing area on the property leased to the west of the warehouse?

A. No, sir.

Q. Did Brown & Bryant ever move any of its permanent bulk storage tanks onto the property that had been leased to the west of the warehouse?

A. No permanent bulk storage tanks were used.

Q. Now, after the lease, Brown & Bryant did what you've indicated of oiling and dragging or dragging and oiling, and then as a result of having that lease and taking down the fence, circulation could go all the way around the warehouse, driving circulation could go all the way around; is that correct?

A. Yes, sir.

Q. And there was storage of movable tanks along the north and the west fence line; is that right?

A. Yes, sir.

Q. And there were some pallets stored out there with—for a short period of time with some empty cans on it; is that right?

A. At different times of the year, sir. [67]

Q. And that was mainly during the wet time of the year, because it would get so wet down in the southern part of the Brown & Bryant yard that you would move those empty cans onto the west fence line; is that right?

A. It would be drums that would be stored out there, yes.

Q. Now, before—going back to before the lease, did you ever see any Brown & Bryant employees using the leased, the railroad property? Now, this is before Brown & Bryant had a right to use it, did you ever see Brown & Bryant employees running a spray rig out

there?

A. Not to my knowledge, no.

Q. Did you ever see Brown & Bryant out in that area running a spray rig or any piece of equipment, draining it out as they were driving around in order to clear out the tank or the spray rig?

A. No, sir.

Q. Now, Mr. Merryman, with regard to the area that was leased by the Brown & Bryant from the railroads, the area to the west of the warehouse, you've said that that area was oiled. Was it also your view that at some point it was blacktopped?

A. I never seen it blacktopped, no.

Q. Do you remember in your deposition in this case I asked you some questions and you were also asked some questions by Mr. MacAyeal?

A. Yes, sir. [68]

Q. And you were under oath at that time?

A. Yes, sir.

Q. And that deposition was in December of 1997; is that right?

A. Yes, sir.

Q. And at that time you gave as accurate of answers as you could at the time?

A. Yes, sir.

MR. LASATER: Your Honor, and counsel, I would like to refer you to the December 17, 1997 deposition, and I will get it for your Honor. It's been lodged.

THE CLERK: I will have to get them.

MR. LASATER: Is it outside of the room?

THE CLERK: Yes.

MR. LASATER: I will go to something else.

BY MR. LASATER:

Q. Mr. Merryman, I want to go back to the sump, what I have been calling the sump, but it's the area where it has the two wash pads and had an unlined sump and then concrete boxes in there. Did you call that the wash rack?

A. Yes, sir.

Q. So how often was that wash rack used during the busy season for Brown & Bryant?

A. Probably every hour it was open. There was always trailers lined up on it.

Q. So you have testified to something called bobtail trucks [69] that had tanks on them?

A. Yes, sir.

Q. Those were the trucks that went up to the Brown & Bryant bulk tank and unloaded the D-D into the bobtail truck, to the tank on the bobtail truck, and then those were—those trucks were driven out to the farmer's field by a Brown & Bryant employee; is that right?

A. Yes, sir.

Q. And then at the farmer's field, those tank trucks that you call bobtail trucks were offloaded into the nurse tanks that were the four-wheeled mobile tanks that Brown & Bryant would move from one farmer's field to another; is that right?

A. Yes, sir.

Q. Now, when those bobtail trucks would come back into the yard after a delivery of D-D to a nurse tank at a farmer's field, what typically happened to that bobtail truck?

A. If there was a truck, we had a lot of D-D or that particular item would be hauled, he would

probably come back in, he would pull on the scales, get a light weight, pull around, load up again, pull back on the scales and then go back out.

Q. And if that truck came in and was then needed to transport a chemical other than D-D, what would happen when that truck came back into the yard?

A. He would pull back on the scales, he would get a light [70] weight and then go to the wash rack and wash out and then—

Q. Would you describe to us washing out one of those bobtail truck tanks into the wash rack sump?

A. They would pull into the rack. The driver would open a valve inside the truck, it was usually a three-inch or two-inch valve, he would climb up on top of the truck with a hose and rinse the truck out.

Q. When he climbed up on top of the truck, was there a hatch he could open up?

A. Yes, sir.

Q. And then there was a water line, a flexible water line or hose that he would use to spray inside the tank?

A. Yes, sir.

Q. And how big was that water hose?

A. There was two. There was a three-quarter inch hose and an inch-and-a-half hose.

Q. And the valve at the bottom of the truck was open at the time that the Brown & Bryant employee was washing out the interior of the tank; is that right?

A. Yes, sir.

Q. And then that combination of D-D that was left in the—well, let me ask you. Was there ever any D-D left inside of these bobtail truck tanks when they came back into the yard?

A. You could never pump them completely dry. They would probably have five to ten gallons, sometimes 20 gallons left in [71] a truck.

Q. And so this operation that you have described of washing out one of these bobtail tank trucks, that resulted in that residual D-D coming out of the tank with the water on to the wash pad?

A. Yes, sir.

Q. And then what would happen to it?

A. If the driver was able to pull right out on top of the wash rack, it would drain into the sump; if not, run out onto—the drainage off the other way into the yard.

Q. Onto the surface next to the concrete wash pad?

A. Yes, sir.

Q. Approximately how often would one of these bobtail trucks with a residual of D-D in them get washed out?

A. It would depend on how many loads we had to haul that day. If we had a lot of D-D going out, it would continue reloading and going. If that particular truck had to change over to a different fertilizer, different chemical, it would rinse out.

They would probably run, during a busy day, those trucks would probably haul 20 to 30 loads, so it depends on how it fell in the schedule.

Q. Would you say it was a daily activity to rinse out a bobtail truck tank that had contained D-D?

A. During the busy season, yes.

Q. And sometimes during the busy season, might you wash out [72] one of those tanks as much as 20 times?

MR. EARLE: Question calls for speculation.

MR. LASATER: I will rephrase, your Honor.

THE COURT: The objection is sustained.

BY MR. LASATER:

Q. During the busy season, did these bobtail trucks with the tanks on them that were running the D-D, did they get washed out with residual D-D—let me phrase it another way.

How often, if you can give us a range, were these bobtailed trucks with the tanks on them washed out after they had had D-D in them?

A. We had three tanker trucks usually running at a time. Each one would probably hold—haul probably ten loads a day per truck. Sometimes more, sometimes less. During the course of a day, I would say each truck probably got washed out at least two or three times.

Q. And that's two or three times washing out residual D-D?

A. That would be whatever they were hauling.

Q. Can you give us an estimate of how often residual D-D would be washed out of these tanks?

A. At least once a day they would clean them at the end of every day.

Q. So is it fair to say at least once a day at the end of the day and sometimes more often than that in a day?

A. Yes, sir. [73]

Q. Now, the nurse tanks that you referred to, I forget what size they were. Were they about 1600 to 2600 gallons?

A. They were 2,000, 2600.

Q. And when they were brought back into the yard after having contained D-D, were they washed

out?

A. Yes, sir.

Q. And was that the standard Brown & Bryant policy?

A. Yes, sir.

Q. And they were washed out in this same rinse rack or—

A. Wash area.

Q. The wash area; is that right?

A. Yes, sir, it is.

Q. And then sometimes those nurse tanks, after having been washed out, would be parked on the leased property after the leasing took place; is that right?

A. Yes, sir.

Q. And they were also parked on the yard, even after the leased property had been leased?

A. Yes, sir.

Q. Now, there were no water fittings, no hose fittings along the west, the very west fence line of the leased property; is that right?

A. Yes, sir.

Q. And you don't remember anything ever being washed out along that westernmost fence line? [74]

A. Not against the fence line, no.

Q. Another piece of equipment that was stored on the leased property were water run tanks; is that correct?

A. Yes, sir.

Q. Would you describe to the Court what a water run tank was?

A. It could be a combination of different tanks, anywhere from 200 gallon horizontal tank made out of

steel up to 500 gallon horizontal tanks made out of steel. We had some 1,000 gallon poly upright tanks, and we also had some 1600 gallon polypropylene upright tanks.

Q. Now, on occasion, after Brown & Bryant leased the property to the west of the warehouse, there were 30-gallon drums of Brown & Bryant's BB Weed Killer D that was stored over there, is that right?

A. I don't remember if there were 30 gallons, I think there were 55 gallons.

Q. And those were empty cans; is that right? Empty drums?

A. Yes, sir.

Q. And you never saw any of the—let me back up and ask you.

Brown & Bryant's Weed Killer D had a characteristic color when it went out on the ground; is that right?

A. Yes, sir.

Q. Would you describe that to us?

A. It was a real dark yellow-orange color.

Q. And in the area that these empty drums of Brown & Bryant's [75] Weed Killer D that had formerly contained Weed Killer D, you never saw that characteristic color around those drums; is that right?

A. I never saw it, you said?

Q. That's my question.

A. No, I did see small leaks and so forth at different times.

Q. Did you see that on the leased property?

A. Yes, sir.

Q. Okay. Where were these empty drums stored?

Were they stored between C and D and 13 and 15?

A. For a while they were in that area, and then further south, like 18 and 19 and E and F.

Q. Now, did you ever see any of the characteristic color of dinoseb when these empty drums were stored in the area C and D and 13 and 15?

A. I can't remember positively, but they always—there was always small leaks. I believe one time we did have one large spill out there in that area. I don't know if it was exactly in that coordinate, that particular area.

MR. LASATER: Your Honor, I see that we have not yet gotten the deposition transcript.

THE CLERK: You will need to provide the Court with a copy. That's only like a third of what we have in the clerk's office.

MR. LASATER: If you will indulge me for just a [76] moment, your Honor, I think we have extra copies.

THE COURT: Yes, I will.

MR. LASATER: Your Honor, I will provide you with this copy.

THE COURT: Thank you.

MR. LASATER: I would like to direct Court and counsel to page 143, line 22, to page 144, line 8 of Mr. Merryman's December 17, 1997 deposition.

MR. MacAYEAL: Your Honor, this is a prior consistent statement. What statement is it supposedly inconsistent to? Is this on the blacktopping issue?

MR. LASATER: No. It's with regard to dinoseb.

MR. MacAYEAL: You are offering a prior inconsistent statement?

MR. LASATER: Yes.

MR. MacAYEAL: Which—

MR. LASATER: 143, line 22 through 144, line 8.

MR. MacAYEAL: I object. This is not inconsistent. The witness said that he did not remember the particular coordinate, but he did remember seeing it in general. This question relates to the particular coordinate.

THE COURT: The deposition can be used to either impeach or refresh recollection. This question, at line 22 asks him if he saw Weed Killer D in the area between C and D and 13 and 15, and the witness answered that he didn't see the [77] color, he saw it wet over there a few times when the railroad spurs were being torn out.

Now, it does refer to a particular—a specific area of the property. And is the objection that the witness has not made specific where he saw Weed Killer D?

MR. MacAYEAL: I may have misheard his testimony, but I thought he said, one, they were 55-gallon drums, so that is inconsistent. But I thought he said that he didn't remember the specific coordinate, but he did remember in general, so I'm not sure it impeaches, but.

MR. LASATER: Your Honor, in order to facilitate this, I would just as soon go over this with the witness again.

THE COURT: All right.

BY MR. LASATER:

Q. Mr. Merryman, let me tell you what I'm driving at here. You've, as I understand it, correct me if I'm wrong, you've testified that, in the court today, that these empty containers of Brown & Bryant Weed Killer D, after the property was leased from the

railroads, were staged along the fence line from time to time?

A. Yes, sir.

Q. And initially they were staged between C and D and 13 and 15 along that fence line?

A. In that area, yes.

Q. In that area. And then you said at a later time, they [78] moved south along the fence line?

A. Yes, sir.

Q. At the time that they were staged, or stored, between C and D and 13 and 15, did you ever see the characteristic color of dinoseb around those containers?

A. I think I said in my deposition the ground was wet in that area. It would soak up fast. When it would soak up on the dirt and oil, it would turn black, but there were white areas. Usually I would say it was just west of the maintenance shop, so it would be about in that area, yes.

Q. My question to you is whether you saw the characteristic color of Weed Killer D around those containers in that area that we have just identified on Exhibit 687.

A. Not on the ground, no, sir.

Q. Now, you said you saw some wet area near these pallets between C and D and 13 and 15 and it was—isn't it correct to say that it was just wet and there was really no color definition to it?

A. Right, it was just dark dirt.

Q. And in light of it just being wet, it could have been water, for instance?

A. Yes, sir.

Q. Now, Mr. Merryman, if I can go back to this blacktopping point. You've referred to it in your

testimony today here as having oiled the area, and I'm asking you whether, in fact, [79] that area to the west of the warehouse was ever blacktopped?

A. I don't remember it being blacktopped. It was—they laid down a layer of oil and sand mix. I don't know if you would classify that blacktop or not.

Q. And when was that laid down?

A. When we first put the drainage in and put the grade to it where it would drain to the rear towards the sump.

Q. And was this sand-road oil mix ever laid down after that first time?

A. Not that I remember, no.

Q. Now, every year after the sand and road oil mix was laid down on the leased property, there was an additional application of oil, of road oil; is that right?

A. It was either a year or a year and a half apart. They tried to do it once a year.

Q. And you would leave that area of the leased property that had been covered with this road oil, you left that for up to a week in order for it to dry?

A. Sometimes longer, just depends how fast it soaked in the ground.

Q. What time of year was this spraying done?

A. Usually when the yard was empty during our busy season. We had less trailers to move around.

Q. So what time of the year was the busy season?

A. It was during the summer. [80]

Q. So it was during the hottest part of the year?

A. Yes, sir.

Q. Now, when the filters were taken off of one of these bobtail trucks that had a tank on it, were they

the ones that had the filter or was it the nurse tank that had the filter?

A. Nurse tank.

Q. Did the bobtail tank trucks have filters on them that were checked?

A. No, sir.

Q. So the nurse tanks were these 2,000 to 2600 gallon tanks that were on four wheels; is that right?

A. Yes, sir.

Q. And they had a tow bar that you could pull behind a truck?

A. Yes, sir.

Q. And state highway regulations required that they be towed empty; is that right?

A. Yes, sir.

Q. And was that—did Brown & Bryant comply with that law of towing those empty?

A. Most of the time.

Q. That's a big hole, but we won't go into it. Then the nurse tanks would come back in and, as you've testified, if they had D-D in them, it was Brown & Bryant's regular policy that they get rinsed out at the wash rack; is that right?

A. Yes, sir, unless they were going right back out on a job. [81]

Q. And then those nurse tanks, if they weren't going to go right back out, after they were washed, they were parked at various places on the yard or on the leased property, either one; is that right?

A. Yes, sir.

Q. And the process of checking that filter sometimes let some of that residual water, and if there

was any D-D in the water, come out; is that right?

A. Yes, sir.

Q. But that was no more than a gallon or so that would come out of checking that filter, is that right?

A. It would be less than that, yes.

Q. So less than a gallon?

A. Yes, sir.

Q. And that was a water—can you describe whether it was D-D or water that came out when the filter was checked?

A. It depends if the trailer had been washed or not. If it had been washed, the strainer had already been removed and it would be mostly water. If it was like sometimes when servicemen would bring it in, they would drain—take the strainer cap off, drain the bowl, which usually held a pint or a quart, take the strain out, wash it out, stick it back in, sometimes before it was washed out, sometimes afterwards.

Q. And where was that done?

A. If they could get on the wash rack, it was done at the wash [82] rack. If not, it would be around that area, sometimes west of the building. It just depends where they were.

Q. Can you remember an instance when a—the taking the strainer, the filter off of a nurse tank took place on the west side of the warehouse?

A. Yes, sir.

Q. Okay. On how many occasions that you know of?

A. I couldn't be exact. A lot.

Q. Now, D-D is—what happens to D-D or what happens to the person when D-D gets on their hands?

A. It will blister and burn it.

Q. And when people would be taking the filters off and if they got D-D on them or got the liquid that was in the nurse tank, what would happen to them?

A. They would have to go wash their hands. They wore gloves, though.

Q. So it was something that the person who was checking the filter—well, one, did you always have to check the filter?

A. The servicemen did, because we had to use them in the field and we wanted them clean before we left the yard. It's easier to clean them in the yard than out in the fields.

Q. Given this effect on the skin that D-D had, this was something that the servicemen would prefer to do around the wash rack where they had the right equipment to do it with; is that right? [83]

A. Yes, sir.

Q. Now, the D-D pull rigs, those are different from nurse tanks; is that right?

A. Yes, sir.

Q. Would you describe a D-D pull rig?

A. It had a—usually a 500-gallon or 600-gallon tank mounted on a two-wheel trailer. Just the trailer actually had a draw bar on the back that could be raised and lowered. On those draw bars, they would run anywhere from 12 to 16 shanks, or tines. "Shanks" is what we called them. They would have a pump mounted on it. It was ground-operated that would pump the material.

Q. If I might show you the exhibits which I have already placed in front of you here, these are some aerial photos.

MR. MacAYEAL: Which exhibit is that, please?

MR. LASATER: 1024, 1025, 1026, and 1027. And the Court should also have those same exhibits in the same notebook as contained Exhibit 687.

THE COURT: Yes.

BY MR. LASATER:

Q. If you would, turn to Exhibit 1025. First off, that is an aerial view of the Brown & Bryant yard and leased property; is that right.

A. Yes, sir.

Q. It's taken from an airplane that's to the northeast of the [84] site; is that right?

A. Yes, sir.

Q. And this photo was taken after Brown & Bryant had leased the property west of the warehouse?

A. Yes, sir.

Q. And you can tell that because there is no fence line along the west side of the warehouse; is that right?

A. Yes, sir.

Q. And you can see the area on that photo which is also shown on Exhibit 687 as the main gate between M and N?

A. Yes, sir.

Q. And that was what the legend on 687 indicates, that was the main gate to the Brown & Bryant site?

A. Yes, sir.

Q. During the whole time you worked there?

A. Yes, sir.

Q. So—

THE COURT: Let me interrupt. If we are looking from the northeast, let me orient this grid map, because—

MR. LASATER: Your Honor, we are looking from up here down at the site.

THE COURT: Yes, and I'm just trying to—all right.

MR. LASATER: I believe the witness can help us orient the Court and counsel.

THE COURT: Yes. You know, I am—unless I am [85] mistaken, this seems to be much more from the east than from the north.

MR. LASATER: From the east-northeast, yes, your Honor.

THE COURT: It's strongly bearing east, because we almost have the northern boundary of the property on the vertical axis here.

MR. LASATER: Yes.

THE COURT: All right.

BY MR. LASATER:

Q. If we use, Mr. Merryman, Exhibit 687 as a reference point, this photo is taken somewhere to the upper right of this exhibit; is that right?

A. Yes, sir.

Q. And it's taken to the east and a little bit north of the northeast corner of the site?

A. Yes, sir.

Q. And it's looking back southwest?

A. Yes, sir.

Q. And in the left hand—well, in Exhibit 1025, in the middle on the left-hand margin, is what later was the double lined pond or sump; is that right?

A. That would be—yes.

Q. And so on Exhibit 1025, that same feature is shown as a square area and it's labeled the "double

lined pond" and it's [86] in the southeast corner of the site?

A. Yes, sir.

Q. Okay. Looking at the main gate on Exhibit 1025, someone driving in would come in off of that road, which runs almost parallel to the top of this photo; is that right?

A. Yes, sir.

Q. And that was Derby Road?

A. Yes, sir.

Q. And so a person would turn off of Derby Road and drive along the north fence line of the leased property and then some of the Brown & Bryant yard and then turn right into the main gate?

A. Yes, sir.

Q. And then as shown in this photo, 1025, to the right of where a person turning into the main gate would look, are—is some equipment stored there along the north fence line; is that correct?

A. Yes, sir.

Q. And if we start at the main gate in Exhibit 1025, the main gate just to the west of the main gate, that first piece of equipment is a D-D pull rig; is that right?

A. Yes, sir.

Q. And then there are a couple of more D-D pull rigs in that photo?

A. There is three more. [87]

Q. And that area north of the warehouse was where the D-D pull rigs were typically parked when they were at the Brown & Bryant site; is that right?

A. For long periods of time, yes.

THE COURT: Let me just ask out of curiosity. Is that a bobtail as you come in the entrance there, just on the east side there in front of what are called the—well, it's actually--I can't see it on this. It's—there is a car in front of the warehouse, east of the warehouse and then there is a truck that looks like it's red or orange. Is that a bobtail?

THE WITNESS: Yes, sir, the one with the tanker on the back.

THE COURT: Okay.

BY MR. LASATER:

Q. And that bobtail truck that the Court has just asked you about is just to the west of what's identified on Exhibit 687 as the "contained rinse system"; is that right?

A. Yes, sir.

Q. And that was put in after you left Brown & Bryant's employ?

A. Yes, sir.

Q. But you saw it because you went back there?

A. Yes, sir.

Q. And there were two pads for that contained rinse system?

A. Yes, sir.

Q. Now, the large tank, the largest tank in this picture is [88] the UN-32 tank; is that right?

A. Yes, sir.

Q. And the largest building in this picture is what we have been referring to as the warehouse?

A. Yes, sir.

Q. And south of the warehouse, as shown in 1025, is a maintenance building; is that right?

A. Yes, sir.

THE COURT: Do you want this exhibit in evidence?

MR. LASATER: Yes, your Honor, I would move to have this admitted.

THE COURT: Any objection?

MR. MacAYEAL: No objection.

THE COURT: Exhibit 1025 is received in evidence.

(Defendants' Exhibit 1025 was received.)

BY MR. LASATER:

Q. Now, 1025 was also a picture that was taken after the big pond in the southeast corner had been double lined; is that right?

A. Yes, sir.

Q. And it was after the concrete boxes had been put into the place of the unlined wash-out sump; is that right?

A. Yes, sir.

Q. And the wash rack is shown in this photo; is that right?

A. Yes, sir. [89]

Q. It's the open shedded area that is just north of the anhydrous ammonia tank?

A. That's one of them, yes, sir.

THE COURT: Looks to me like a covered area. I don't see any sheds. I see what looks like maybe it's a shed there, but those look just like aluminum roofing.

MR. LASATER: Is what your Honor is referring to, was it open on all four sides and it had a roof?

THE COURT: Yes, exactly.

THE WITNESS: Yes, sir.

BY MR. LASATER:

Q. And that, Mr. Merryman, was a covered area that was—that covered the north wash pad?

A. Yes, sir.

Q. And the west wash pad by the sump did not have a cover on it?

A. That's right.

Q. Okay. The area that's north of the warehouse that's shown both on Exhibit 1025 and 687, was there ever any kind of sump in that area as far as you knew?

A. Not to my knowledge.

Q. So there was no low place where water collected?

A. No.

Q. Now, on the west side of the warehouse, and here I'm talking just the warehouse, on the property that was leased, [90] but due west of the warehouse, when it rained, did water collect here?

A. There was one low spot out there. And I want to rephrase my statement. On the north side there was a low area that a little water might set there, but it might be an inch deep.

Q. Getting back to the low place on the leased property, that was down to the southern end of that leased property; is that right?

A. Yes, sir.

Q. So can you tell us, the grid line, 12 or 13, how far north did that low place extend when water was in it?

A. I would say it would be 14, would be about the highest. 13, 14, right in that area.

Q. So that was the most north of that that that

puddle would grow?

A. Right.

Q. And that puddle would extend south to where it says "the gate" on Exhibit 687?

A. It would go down to about 18, grid 18.

Q. It did not get as far as the gate?

A. Usually not, no.

Q. That puddle would go how far to the east? Would it go to G or would it go any past?

A. Yes.

Q. To the east? [91]

A. It would depend on how much rain we had. Usually it stayed right in F and G area right there.

Q. So it was a pretty narrow puddle?

A. Yes, sir.

Q. So it was between F and G and 18 and 13; is that right?

A. Right. As the further north it went, it would go sometimes a little wider over to E and it would kind of follow the fence line and kind of taper down.

Q. But there was no low spot or collection area for water north of 13, grid line 13 that was west on the leased property; is that right?

A. No, everything would funnel to the south end.

Q. Now, if I might turn your attention to Exhibit 392, which I'm about to hand you, do you recognize—

And your Honor, do you have the exhibit?

THE COURT: Yes, I do.

BY MR. LASATER:

Q. Do you recognize what's shown in Exhibit 392 as showing both the Brown & Bryant yard and the

leased property?

A. Yes, sir.

Q. And this photo was taken at a time after you were employed by Brown & Bryant; is that right?

A. Right, it was after that.

Q. Can you recognize or can you date this photograph any more than just to say it was after you left the Brown & Bryant **[92]** employment?

A. No, sir. It had to be quite a while after I left, because I see some—it looks like they have some recycling water containers in the back, so it had to be towards the end of Brown & Bryant.

Q. And do you see a water puddle on the leased property?

A. I see some dark areas. I don't know if that's a water puddle or not.

Q. Is that dark area on the south part of the leased property, is that in the same area where you earlier described was where water collected after a rain?

A. Yes, sir. It's quite a bit larger what I described.

Q. The photo describes it as larger?

A. Yes, sir.

Q. Now, also in the area to the—shown in this photo, Exhibit 392, which is to the east of UN—the UN-32 tank, and to the west of the double lined pond, do you see a water puddle there?

A. I see a dark area, yes, sir.

Q. Was that dark area an area where water collected after a rain?

A. Yes, sir.

Q. And the Brown & Bryant yard directly north of that area drained into that southern portion; is that right?

A. Yes, sir. [93]

Q. And that particularly was the case after the pond was double lined because a berm went up that kept the water from going directly into the pond; is that right?

MR. MacAYEAL: Objection as to foundation.

THE COURT: If he knows.

Do you know?

THE WITNESS: It couldn't get into the pond because there was a berm around it, so it would settle in there.

THE COURT: When you were there, was there a berm?

THE WITNESS: Yes, sir.

THE COURT: All right.

MR. LASATER: Let me clarify that.

BY MR. LASATER:

Q. When the double lined pond was put in, that was approximately 1980; is that right?

A. In that area, maybe a little before.

Q. And up until that time, the water from the Brown & Bryant yard washed into the pond and it—there wasn't anything that limited it from going into the pond, it was encouraged to go into the pond?

A. It actually collected in that same area the water is right now. There was a small berm around it, but it had a 12-inch pipe buried in the ground, so all the water from that low area would go into the pond.

Q. And then after the double lining, there was this

sump that [94] was put in that you testified to this morning and that pumped water into the double lined pond?

A. It didn't pump into it, it would run from there into it.

THE COURT: Can we agree on which area we are talking about? Are we talking about the area that is easternmost directly south of the double lined pond or is it the area that is west of the double lined pond and appears to be south of whatever it is, to the south of the anhydrous ammonia tank? It's blue. I don't know what it is. It doesn't appear on the diagram, 687.

That looks like a dark area that might be water. It would be roughly, looks like it's almost contiguous to the west boundary of the double lined pond and it is some distance east of the UN-32 thank. That's an area that looks like it's dark that could be water.

And then there is the second area that is directly south of the southeast corner of the property of the double lined pond. Which one are we talking about?

MR. LASATER: I'm talking about the area that is bounded by a triangle of the UN-32 tank, the anhydrous ammonia tank and the double lined pond.

THE COURT: All right. I'm with you. Let's take the afternoon recess at this time. We will stand in recess until 3:10.

(Recess) [95]

THE COURT: Back on the record in United States versus Atchison, Topeka.

You may continue, Mr. Lasater.

MR. LASATER: Thank you, your Honor.

BY MR. LASATER:

Q. Now, in Exhibit 392, north of the north fence

line to the Brown & Bryant yard and the leased property, there is a building with a light-colored roof and it looks like some pavement around it. Do you see what I'm talking about?

A. Yes, sir.

Q. That's in the upper right-hand portion of this Exhibit 392. Was that area at some point blacktopped?

A. The area just north of the main gate there?

Q. Yes.

A. Yes, sir.

Q. And when did that take place?

A. When they built that facility right there, it was Kernridge Growers, I believe the name of it was. When they built that, they blacktopped that area.

Q. And they blacktopped it as it's shown in this photo, 392?

A. Yes.

Q. And do you know when that took place?

THE COURT: I'm lost. On my 392, you can't see the north fence line. Excuse me. I didn't have the exhibit unfolded, all right. [96]

THE WITNESS: I know it had to be I think it was '81, '82, somewhere in that area.

BY MR. LASATER:

Q. And before that blacktopping took place, what was the ground surface there north of the site?

A. It was just a dirt field.

THE COURT: So this is blacktop as of this photo?

MR. LASATER: That's my understanding, your Honor.

BY MR. LASATER:

Q. Did you see the equipment come in there to

blacktop it?

A. I didn't see it come in. But it was a blacktopped surface.

Q. And so at the time that this photo was taken, sometime after you left Brown & Bryant's employ, it's showing the blacktopping as you remember it there when it was first put in?

A. Yes, sir.

MR. LASATER: And, your Honor, this is also a joint exhibit that I would move into evidence.

THE COURT: Joint exhibits are in evidence.

MR. LASATER: Okay. Thank you.

BY MR. LASATER:

Q. Now, if we shift back to the bulk D-D tank, prior to the sand storm, or prior to the windstorm that crushed it, what was it set on top of?

A. Just gravel base. It set on a gravel pad.

Q. And as far as you know, that gravel was set over soil? **[97]**

A. As far as I know.

Q. Shifting to the Nemagon that was handled on the Brown & Bryant site, after the Brown & Bryant bobtail tank truck had taken the diluted Nemagon, diluted with water to the farmer's field and that tank truck came back, it was rinsed out at the wash rack area; is that right?

A. Yes, sir.

Q. And that diluted Nemagon was made from Nemagon that had been delivered to the Brown & Bryant site in 30-gallon containers; is that true?

A. 30 gallons or 5 gallons.

Q. And when it was—when the 30-gallon

containers were used to make this diluted Nemagon, it was hoisted up on a forklift, placed over the bobtail truck tank and drained into the top of the tank?

A. Yes, sir.

Q. And that tank had already had water put in it?

A. Yes, sir.

Q. And then that tank truck went off, the 30-gallon containers of Nemagon were kept at the Brown & Bryant yard; is that right?

A. Yes, sir.

Q. And those were rinsed out at the wash rack?

A. Not usually, no.

MR. LASATER: If I could direct Court and counsel to Mr. Merryman's deposition, page 128, line 11, through 22. And [98] I have a copy for the Court.

THE COURT: I have the lodged deposition now, the original.

MR. LASATER: Very well. Absent an objection, I will read these lines.

THE COURT: You may proceed.

MR. LASATER: "Question: Then what happened to the 30-gallon drums after they had—their contents had been put into one of these water tank trucks?

"Answer: It depends on where at that time they had the drum storage. For a while, it was by the 32 tank and then for a while, it was over along the west side of the yard."

MR. MacAYEAL: Just for the record, that's "west end of the yard."

MR. LASATER: "West end of the yard."

"They would just leave it on the pallet, take it over

there and then store it until they got ready to rinse them out. And they bring them over to the wash rack. They would rinse them out and then take them back and then leave them stored."

BY MR. LASATER:

Q. Do you remember me asking you that question and you giving that answer at your deposition?

A. Yes, sir. **[99]**

Q. Now, did you ever see an instance when any of the contents of an empty Nemagon can would leak onto the ground?

A. Yes, sir.

MR. LASATER: If, again, I may read, your Honor, or I direct counsel and the Court to page 129, lines 7 through 18.

MR. MacAYEAL: I think there was maybe a time period issue, but maybe the witness—I will clear it up on cross, so I have no objection.

THE COURT: You may proceed.

MR. LASATER: Question by myself: "The 30 gallon drums, did you ever, after they were emptied of Nemagon, did you ever see them leak any of their contents onto the ground?

"Answer: No.

"Question: Did you ever hear of that ever happening?"

Objection by Mr. MacAyeal.

MR. MacAYEAL: "Mr. McKae."

MR. LASATER: Excuse me, Mr. McKae.

"I object. It calls for hearsay"—

THE COURT: Don't read the objection. Skip to the answer, unless somebody is reasserting them.

MR. LASATER: "Answer: I never heard of the drums, the 30-gallon drums leaking."

BY MR. LASATER: [100]

Q. Mr. Merryman, did I ask you those two questions and did you give those two answers at your deposition?

A. Yes, sir.

THE COURT: You don't have to ask him that question. The testimony speaks for itself.

MR. LASATER: Very well, your Honor.

THE COURT: Unless you are trying to test his memory, but if it's offered for impeachment, all you have to do is read the question and the answer.

MR. LASATER: Very well, your Honor.

BY MR. LASATER:

Q. Now, harkening back to your testimony earlier today when you were talking about the can crushing that took place near the can crushing area, both—well, the can crushing area before there was a concrete pad put there, now, did the residue of those cans at times get to be two to three inches deep and as much as six feet or so across?

A. Yes, sir.

Q. Now, the BB Weed Killer D came onto Arvin site, the Brown & Bryant site both in cans and in bulk; is that right?

A. Yes, sir.

Q. And at least on one occasion, you saw Weed Killer D spill out of the bulk holding tank located on the Brown & Bryant yard; is that right?

A. Yes, sir. [101]

Q. And that was at approximately P and Q and 14

and 15 of the grids, which are shown on Exhibit 687?

A. Yes, sir.

Q. And the BB Weed Killer D that came in in 30-gallon barrels, you never saw any of that residue from those barrels leak out onto the ground at the Arvin site; is that correct?

A. No, sir.

THE COURT: No, is that correct, or yes, is it correct?

THE WITNESS: No. I have seen some of them leak.

THE COURT: You have seen it leak, all right.

MR. LASATER: Your Honor, if I could direct yourself and counsel to Mr. Merryman's deposition, page 139, line 19 through 140, line 14.

MR. MacAYEAL: I object. That's not inconsistent.

THE COURT: It actually amplifies his answer. I will permit the reading.

MR. MacAYEAL: Okay.

MR. LASATER: Your Honor, in particular, I would read from on page 140, line 8 through 14, is the directly contradictory portion. The portion before that he designated to make it clear that we were referring to the 30 gallon D-D barrels.

THE COURT: Yes, you may.

MR. LASATER: Starting on—at page 139, line 19.

[102] "Question: Now, what happened to the 30-gallon BB Weed Killer D containers?

"Answer: The ones we took to the field, I don't remember ever bringing any back myself. We did have some empty ones in the yard that other servicemen had brought back and they were stored in two areas or at different times, the different

years they were stored there in two different places.

"Question: Were they rinsed in the—at the wash pads?

"Answer: I never seen them rinse any of them. I don't know if they were done in the field or if they did them in the yard. I never opened one up and looked inside. I never saw anyone rinse them.

"Question: Did you ever see any of the residue in those 30-gallon barrels spill out onto the ground at the Arvin yard?

"Answer: I never seen them spill. I seen spots around them where it was wet. I don't know if it was from that particular drum or something else, but."

MR. MacAYEAL: I would ask that he continue—

MR. LASATER: I would be happy to continue, your Honor, after the colloquy of counsel if Mr. MacAyeal wants me to be more complete.

THE COURT: I think he wants you to start at line 15. [103]

MR. LASATER: Okay.

"Did those wet spots have the characteristic color?

"Answer: Over there it was mostly dirt and it was just wet dirt and."

I would propose to then start reading again at page 141, line 16.

THE COURT: That's correct.

MR. LASATER: "Question: Now, you are saying that there was a wet spot around those barrels that"—

THE COURT: "Around some barrels."

MR. LASATER: "Around some barrels that you were talking about?

"Answer: One time when I came into the yard, I went to drop a trailer and I drove back around and I had a habit of parking on the west side of the yard. It was less traffic over there. It was easier to walk in the shop. And I happened to notice there was a wet spot around where the drums at that particular time were being stored on the west side of the yard next to the fence. And I happened to notice a wet spot. Like I say, I don't know what caused that spot. I don't ask, I just happened to see it.

"Question: And what—and that "wet" spot, what did it look like—what did it look to you like?

"Answer: There was all dirt that was underneath the [104] pallets over there and it was just wet and there was no really color definition to it, just wet.

"Question: And approximately what year was this?

"Answer: It was before the dust storm, probably around '79, in the same year. We stored drums over there, I think, a couple of years and it was '78, '79, somewhere in there.

"Question: Now, you were saying on the west side. Can you tell us, using the grid map, where you saw this west spot?"

Should have been wet spot.

"Answer: In the area between C and D and 13 and 15, somewhere right in that area.

"Question: And other than this one occasion of seeing that wet spot around BB Weed Killer D drums, did you see any other wet spots around those kinds of drums?

"Answer: Not around the drums per se, unless it

had been raining or something like that, it would be wet."

BY MR. LASATER:

Q. Mr. Merryman, turning to the D-D pull rigs, I believe you indicated in the course of your testimony that sometimes there was leakage from the sight gauges?

A. Yes, sir. [105]

Q. Is it also accurate to say that you're unable to estimate the quantity that you ever saw leak from one of these sight gauges?

A. I have no idea how many gallons.

Q. When was the concrete apron that was built to the west of the warehouse and right next to the warehouse, when was that put in place?

A. It had to be right after you took out the railroad spur, but I don't know what year that was.

Q. When there was a rain actually going on, there was a thunder storm or rain actually coming down, did you work in the—did you, the Brown & Bryant employees, work in the Brown & Bryant yard?

A. Yes, sir.

Q. So you just kept on working right through the rain?

A. Right. We worked in the maintenance department and the shop working on pumps or different items.

Q. Would you go out into the yard or would you wait until the rain had stopped?

A. Usually when the rain stopped, unless there was an emergency of some type.

Q. Now, the procedures that you have outlined with regard to the wash rack and that area of washing,

do you have any way of knowing how long those procedures had been in place prior to your employment? [106]

A. No, sir.

Q. Now, how did you come to leave Brown & Bryant's employment?

A. I went on vacation and came back unemployed.

Q. What's your understanding of why that happened?

A. I got a letter stating from Jack Brown that I was no longer employed.

Q. And what did you hear was the reason behind that termination?

A. I never got a definite reason. I heard a lot of rumors.

MR. LASATER: No further questions, your Honor.

THE COURT: Mr. Earle, do you wish to cross-examine?

MR. EARLE: Yes, I do, your Honor.

CROSS-EXAMINATION

BY MR. EARLE:

Q. Does the witness have Government's 100 up there?

A. I don't know what that is.

Q. That was the photograph marked by the government at the beginning that you wrote on?

A. I don't see it.

THE CLERK: You took it, Mr. MacAyeal, when you took it off the Elmo.

THE COURT: The number was Government's Exhibit 100. It's not in those binders. It was a

separate sheet.

MR. EARLE: That's all right. I will attempt to work off what has been marked as 387. [107]

BY MR. EARLE:

Q. Mr. Merryman, my name is David Earle, and I represent Shell and we met at your deposition and we met earlier today out at the hall.

I would like to ask you, first of all, sir, isn't it true that you saw more spills of D-D resulting from activities at Brown & Bryant employees loading Brown & Bryant equipment than from tanker trucks unloading D-D at the site?

A. Yes, sir.

Q. I would like to direct your attention to the evaporation pond, which is marked on Exhibit 687 as the double lined pond. Prior to the time that that pond was double lined, was it bermed?

A. It had a berm around it, yes.

Q. Did it have a berm around it as long as you were employed at Brown & Bryant?

A. Yes, sir.

Q. Can you tell me approximately how high that berm was?

A. It wasn't very tall. It was probably just a couple of feet.

Q. And now I would direct your attention to the sump, which you identified as the wash rack, which is right in this area here and it's identified on this grid map as sump number 1. At the time that you worked for Brown & Bryant, was that sump bermed? [108]

A. No, sir.

Q. What kept people from falling in that sump?

A. It had a fence around it, a chain link fence around it.

Q. Is it correct that following the destruction of the dedicated D-D tank at Brown & Bryant during the windstorm that you testified about earlier that there was no bulk storage of D-D at Arvin, at least until sometime after you left that site?

A. Not a stationary tank, no. They did have milk trailers that they would line up and put D-D in.

Q. Was it your testimony earlier that the majority of that—that D-D following that windstorm was sent to Shafter for storage?

A. The majority of it, yes.

Q. Can you tell me what was the primary D-D application season?

A. It was during the summer. I couldn't tell you exactly what months. It was during the hot part of the year.

Q. Okay. Were there other parts of the year that D-D was applied?

A. Yes, sir.

Q. What times of the year were those?

A. Before planning getting cotton ground ready. They would use it before carrot ground.

Q. When would that be?

A. Probably in February, back in that area. Sometimes earlier [109] than that. Sometimes later than that.

Q. Can you apply it in the rain?

A. We never did, no.

Q. Can you describe for me, I know that you have testified that most of your duties took you out of the

Arvin yard for field applications, but what were your duties in the Arvin yard?

A. The last couple of years I was there, I was a service manager. I made sure all the servicemen were lined out, had equipment they needed to get them going.

Q. There was never a Shell representative that ever directed you in the performance of your duties as a service manager at the Arvin yard, was there?

A. No, sir.

Q. Did you ever see any Shell employees assisting the unloading of tanker trucks containing D-D at the Arvin site?

A. Shell employees?

Q. Yes.

A. No, sir.

Q. Did you ever see any Shell representative?

MR. MacAYEAL: I would object on foundation grounds, Judge, to the extent one can tell who a particular person works for.

THE COURT: It obviously assumes that you know that a person is a representative of Shell. You can start by telling [110] us if, while you were on the site, working or doing anything else in the period you were there, you ever saw anybody who was identified to you as a Shell employee.

THE WITNESS: Just once in a while, I was in the office, a salesman would come by, but I never seen anybody out unloading.

BY MR. EARLE:

Q. Now, it was Brown & Bryant's policy to regularly wash out the bobtail tank trucks, the nurse tanks and the pull rigs, wasn't it?

A. The pull rigs were hardly never washed out unless they had a problem or they had some sediment or something inside the tank they couldn't get out. The rest of them were washed out regularly.

Q. Did you ever know of any employee or representative of Shell Oil Company directing the manner in which that washing out should take place?

A. No, sir.

Q. You never—or were you ever aware of any Shell employee or representative ever assisting or directing in the washing of bobtail trucks, pull rigs or nurse tanks?

A. No, sir.

Q. Your principal job function with Brown & Bryant was the application of D-D in the farmers' fields, was it not?

A. That was one of the jobs, yes. [111]

Q. And incumbent or included within that job was getting that equipment to the farmer's field; isn't that right?

A. Yes, sir.

Q. Any representative of Shell Oil Company ever direct you or assist you in getting the nurse tanks or the other apparatus that you used to farm his field?

A. No, sir.

Q. Any Shell employee or representative ever assist you or direct you in the application of material to a farmer's field?

A. No, sir.

Q. You testified earlier today about washing out Nemagon cans at the wash rack. Any Shell employee or representative ever assist or direct you in that activity, sir?

A. No, sir.

Q. Any Shell representative or employee ever assist you in the crushing of the cans that you testified in crushing down there by the UN-32 tank?

A. No, sir.

Q. Did you ever see any Shell representative or Shell employee assisting or directing any Brown & Bryant employee in the performance of any duties at the Arvin site?

A. No, sir.

MR. EARLE: No further questions, your Honor.

THE COURT: Any redirect?

REDIRECT EXAMINATION [112]

BY MR. MacAYEAL:

Q. While you were working at the Arvin yard, did the entire plant area drain down to that pond?

A. Yes, sir.

Q. And was that the purpose of that pond, to hold rainwater runoff?

A. That area was, yes.

Q. Now, you testified earlier about sight gauges, you remember that?

A. Yes, sir.

Q. Could you explain what a sight gauge is?

A. It's a clear piece of poly tubing that would run the length of the tank. It would tell us how much material was in the tank.

Q. And what types of—were those on pull rigs?

A. Pull rigs, nurse tanks and bulk storage tanks.

Q. Now, did you ever actually see one break?

A. I never seen them break. I seen broken ones.

Q. And did you see those out on the leased parcel

on the west side?

A. I have seen them in all places of the yard and the field.

Q. And would there be a particular time when that would happen?

A. Usually in the evenings, probably, because if somebody seen them leaking, they would stop and fix them, but it could happen [113] at any time.

Q. But you remember them happening at night from time to time?

A. I remember some happening at night.

Q. Now, what is the—what is your best recollection whether the Nemagon cans were rinsed out? Do you recall that they were stored over there on the west parcel?

A. Yes, sir.

Q. What is the explanation of that about whether they were rinsed or not?

A. I don't remember them ever being rinsed. I'm sure they probably were, but I don't know for sure.

Q. Give us your best recollection.

A. I just know when they fill the rig up, we take them and store them over there.

Q. As far as the dinoseb, you saw the yellow material from time to time around the plant?

A. Yes, sir.

Q. And you understood that to be connected with the BB weed—the Weed Killer D?

A. Yes, sir.

Q. Now, how often in a given month—how many times, if you can estimate, would employees be checking the filters?

A. It's hard to say.

Q. What's your best estimate? More than 20?

A. Yes, sir. [114]

Q. All right. And these rigs were stored over on the west side?

A. All over the yard.

Q. And you used D-D year-round?

A. At times we did, yes. Mostly in the summer.

MR. MacAYEAL: Thank you.

THE COURT: Anything further, Mr. Lasater?

MR. LASATER: No, your Honor.

THE COURT: Mr. Earle, anything further for Mr. Merryman?

MR. EARLE: Nothing further, your Honor.

* * *

IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA
HON. OLIVER W. WANGER

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, et al.,	NO. CV-F-92-5068 OWW
Plaintiffs,	Court Trial, Day 1
vs.	
BROWN & BRYANT, INC., et al.,	
Defendants.	
AND RELATED CROSS-CLAIMS AND THIRD PARTY ACTIONS	

Fresno, California Tuesday, March 30, 1999

REPORTER'S PARTIAL TRANSCRIPT
OF PROCEEDINGS

* * *

[3]

* * *

JOHN WALTON,

called as a witness on behalf of the Government, having been first duly sworn, testified as follows:

THE CLERK: Please state your name and spell your last name for the record.

THE WITNESS: My name is John Walton, W-A-L-T-O-N.

THE CLERK: Thank you.

DIRECT EXAMINATION

BY MR. MacAYEAL:

Q. Can you please explain to the Court what you do.

A. I'm a professor at the University of Texas at El Paso.

Q. What department?

A. Department of Civil Engineering. Also associated with the Environmental Science and Engineering Ph.D. program.

Q. Do you have any particular specialty?

A. Fate and transport contamination damage.

Q. And what disciplines relate to that particular field?

A. Well, it's a multi-disciplinarian field. It has to do with biology, chemistry, geology, hydrology, engineering.

Q. What about mathematical quantitation?

A. And also part of it, but I do a lot of numerical modeling.

* * *

[16]

* * *

BY MR. MacAYEAL:

Q. Dr. Walton, let's—can we—why don't we start with dinoseb. What was your—you studied the properties of [17] dinoseb?

A. Yes.

Q. And what properties were relevant to your analysis?

A. Some of the major properties are—the two major properties, first of all, has very low vapor pressure, so it will not volatilize or vaporize to any significant extent. So if it spills, it tends to stay put.

Second of all, its solubility of water. And one of the questions is if it transports down to groundwater, and so one must know how it behaves with water. It has a mild solubility of water, about 52 milligrams per liter.

THE COURT: Slow down.

THE WITNESS: Fifty-two milligrams per liter.

THE COURT: Moderate solubility.

THE WITNESS: I call it "mild," but these terms depend on context, of course.

BY MR. MacAYEAL:

Q. And why were those factors relevant?

A. Those factors are relevant because when you look at a spill, whether it's on the leased or main parcel, but a spill of dinoseb, you want to know or estimate what would happen with it. And so for something like dinoseb that doesn't have a significant vapor pressure, it will tend to remain in place where it's spilled until it's transported by some other means. In this case, it could either be water or it could be blown by [18] the wind, perhaps.

Q. Now, as part of your analysis, did you look at focused infiltration?

A. Yes, I did. Because of my experience in hydrogeology and also my research experience, I understand that a lot of contaminant migration has to do with preferential pathways and focused infiltration.

Q. Can you explain to the Court what you mean by "focused infiltration."

A. What I mean is we're located in a fairly dry environment; however, what happens, particularly in an industrial site like this, is water tends to be concentrated. That is, for example, you might have the roof of the warehouse, and so all the water that rains on the roof of the warehouse comes down.

In this case, on one half of the warehouse would come down and either come right off the edge or go into the downspouts and then directly back down on the surface. And so if you were looking and standing, for example, at the edge of the warehouse, then it would seem like quite a bit of rain came down right there because all the rain from the whole roof is concentrated on that point.

And what could happen at a site like this is that you have, say, a precipitation event, or what happens in industrial water use, such as hosing out the building, and [19] that water can go out on the parking lot and then it tends to run downhill. And it runs downhill until it gets to places where it can infiltrate, and in a lot of places it can infiltrate. I call it "focused," because you take water from a broad area and concentrate it down to where it seeps in.

The most obvious spot at this site is down at the waste pond. The entire site was created to go down to the waste pond. And so if you have a big storm, the water comes down, it picks up, for example, first of all, with dinoseb. It can pick up and dissolve the dinoseb

or it could entrain the dinoseb. Just like if you wash your driveway with a hose, it can take and wash the dust off. It doesn't have to dissolve, it can wash the dust off. The dust can be entrained in the water.

So it can be entrained in the water and then washed down to, for example, the waste pond. So the waste pond is one point—that's one example of focused infiltration.

Q. What's another example?

A. Another example would be we heard Mr. Merryman testify that when they oiled the surface, the oil didn't go all the way up to the edge of the building, because they couldn't spray all the way up to the edge of the building. And it didn't go all the way up to the edge of the path, it stuck out on the leased parcel. And so right there you have a place that's not oiled. [20]

And so you have bare soil that's not oiled. You have water that can come down off the eaves right there, so you have a source of water. You have potentially a source of spills, because you have dinoseb stored out on the pad out there, and so you could have a spill of dinoseb.

You have a rain. From a small rain, turns into a lot when you count how much comes from the eave of the top of the roof all the way down, and it can be infiltrated right there at the gap between, say, the concrete pad and the oiled surface.

There's a lot of examples in a site like this. It would change in time. And people that work there would not necessarily be aware of it.

Another example would be a pothole. You could have a pothole. Mr. Merryman testified you oiled the surface, you drive these heavy rigs over it that's not

properly impacted as you would do to do it properly, so you could get potholes.

It could rain. If those were low spots, the water could run down into the low spots, and if the hole has been put into the surface by, say, a heavy vehicle, then you have infiltration right there. So this is what I mean by "focused infiltration."

* * *

[26]

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Q. Did you study the rainfall as part of your analysis?

A. Yes, I did.

Q. How did you get that data?

A. I got the data from the Weather Service. I think it was the Desert Research Institute that has it. And I originally got it off the Internet, and they had some graphs that were very useful. And then I wanted to do some more detailed calculations and I got some more detailed data from them.

Q. Did you do any analysis of the frequency of rain events?

MR. LASATER: Your Honor, I object at this point. This testimony is testimony that was generated after the expert report and, therefore, contrary to the pretrial order.

MR. MacAYEAL: Judge, this was the subject of the deposition.

THE COURT: Was the rain data relied on disclosed at the deposition?

MR. MacAYEAL: The last session. It was—[27] Mr. Lasater interrogated the witness on the very topic.

MR. LASATER: If this is what I think it is, your Honor, if it's consistent with what has previously been presented, it was presented to me at the first session of the deposition.

THE WITNESS: There were two parts. One was given to him in the first deposition, and then he asked me some questions in the first deposition and I realized how I could answer them, so I came back in the second deposition and gave him some more information.

THE COURT: All right. It would appear that the information has been disclosed. It is frequent that an expert or any other—whether it be a hydrologist, chemist or other, may be questioned in such a way that additional subjects or data are required.

Any competent lawyer would have asked the question of any expert, "Have you done everything you wanted to do, needed to do, was told to do, and is there anything you think you should do?" And in that process, often the expert determines that there is additional work necessary.

And, of course, the closing question always has to be asked, "Have you completed all your work? Is there anything else you're going to do?" And if the expert indicates that there is more, or further inquiry, then the protection for the party is to leave the deposition open and [28] to get the data and then to deal with it so it can be provided, both as a subject of cross-examination, inquiry and analysis, and to the inquiring party's experts. It sounds to me like this was done here, and, therefore, I'm going to overrule the objection.

You may answer.

BY MR. MacAYEAL:

Q. What was the question that Mr. Lasater asked

you at the deposition that you tried to answer for him?

A. Well, initially I had gone to the Weather Service and obtained some data on the probability of precipitation. Because the scenario pathway I'm describing is you have a history of—of poor housekeeping and spills that I can only describe as coming at random, because I don't have any other data.

And so when I looked at the DCP, the question is, will rainfall precipitation come before it has time to evaporate. Because if you just let it sit there for a definite period, it will evaporate. And so that was the question.

And Mr. Lasater asked me in great detail about this hypothetical one gallon, about what would happen to it. And that night I had a brainstorm in terms of how I could describe it quantitatively and give him an answer, and that's what I developed at a later time. [29]

So originally I had some data depending on the season, the year, the probability of precipitation following the spilling in a certain period of time. But what you can do is put that kind of data together with the binomial distribution statistics and look at the question if you had multiple spills, what's the probability that one or more of them would be followed by precipitation within a certain period of time after that spill.

Q. What's binomial?

A. The binomial is just a distribution that was—statistical distribution. It describes probabilities.

For example, if I were to have a dice right here and if I were to roll that dice, what's the probability that I would—if I rolled it ten times, that I wouldn't never get a 6. And the binomial would answer that for me,

the probability I would never get a 6 if I rolled it a certain number of times.

Q. That's a mathematical computation?

A. That's a mathematical computation. Very common, well understood.

Q. How did you apply that to this question?

A. The way I applied it to this question is I didn't know when the spills were occurring, so I assumed the spills were random in time. And, based on that, I calculated the probability that you get a precipitation event within a [30] certain number of days after any point in time.

So what's the probability if you have a random point in time within 24 hours? You get precipitation. What's the probability within two days? You get precipitation. What's the probability of a week? You get precipitation. And not only precipitation, but the amount is important, because we're talking about precipitation that's large enough to lead to a runoff event.

And so the textbook number for enough precipitation to lead to a runoff event from a parking lot type area is about a millimeter of precipitation. So I actually calculated the probability that you get a millimeter or more precipitation within a certain time period after it was spilled.

Q. What were the results of your analysis?

A. The results of my analyses were—it's in one of these reports here, but I came up with a table that gave those probabilities. And I'm not sure just where it is in this pile of stuff. I'll have to look through it. But within here there's this table of probabilities that I came up with.

So, first, there's a table, but, then, ultimately, the table leads to more specific calculation. The original table just says what's the probability for one spill getting caught by a rain. And if it's, like, within a day, the probability is about 7 percent, and within a week, [31] precipitation is about 20 percent. Now, I'd have to look up the precise numbers, but it's approximately that.

But then you can put it together with the binomial and say, What's the probability if I have, say, 20 random spills that one or more of them was followed by a precipitation? And you can generalize that to one, two, three, four, all the way up to fifty applied it. So I have this chart right here—do you want me to show it on the Elmo?

Q. Could you explain that chart, please.

A. Yeah. I'll try to speak up.

THE COURT: Does it have an exhibit number?

THE WITNESS: This was given to Mr. Lasater at my last deposition, so I think it must have a number.

THE COURT: How about for trial?

MR. MacAYEAL: Let's mark it—

THE COURT: Have the defendants seen this chart?

MS. BECKER: Could you give us just a second, please.

MR. MacAYEAL: Is this something that was provided at the deposition?

THE WITNESS: Yeah, this is a bigger version, is all. It's the same.

MS. BECKER: Can you tell us the exhibit number from the exhibit list that I'm working on? [32]

MR. MacAYEAL: I will just use it as a

demonstrative exhibit.

Just use it to explain your analysis.

THE COURT: Let me ask one question here, Doctor. The underlying data that you used, which was the precipitation data, how many years did you use for your model?

THE WITNESS: I think I said in here. It's like, I think, 30 some years, if I remember right. I'd have to go back and check the exact, but something like 30 years or more. And it's from Bakersfield, by the way.

THE COURT: That would cover this site?

THE WITNESS: That would cover this site. It was the closest site they had to Arvin that I could find, and that was Bakersfield, and so it was the most relevant data that I could get.

THE COURT: And then how was the precipitation quantified? Was it quantified by volume, by quantity, by frequency, by duration, or what other characteristics?

THE WITNESS: This particular data was daily data by the National Weather Service, and they have standardized methods for collecting precipitation data, and it was depth of precipitation. And so the data I had was depth of precipitation. Like today, they had so many fractions of an inch of precipitation.

And then what I did was wrote a little computer [33] algorithm, and it would sort through the data and it would look and say is the precipitation—would go through each day and say, Was there precipitation within 24 hours? Was it greater than the amount of one millimeter? Was it great enough to cause a runoff event?

THE COURT: And the one millimeter, is that a

depth calculation?

THE WITNESS: That's a depth calculation. That's the depth that the Weather Service would report in the newspaper. Quarter of an inch of precipitation, it's a depth.

THE COURT: And so, in your expert opinion, one millimeter of precipitation is sufficient to do what? To penetrate at an infusion site or to carry the contaminant that's being studied in solution or transport it?

THE WITNESS: One millimeter is the value I looked up in the hydraulics text in a reference to generate runoff from a parking lot. That's the point in time, if you have one millimeter precipitation on a typical parking lot, you go out there and you would see that it starts to run off the surface.

And so at that point in time you have enough where it starts to run off on the surface.

And then when it starts—so when it can run off the surface, now you are really integrating the volume of precipitation over a larger area. That is, once it starts to run off, you're taking precipitation from a large area, it [34] starts to collect and flow down, so you start to see flow.

THE COURT: And your assumption was that it was hitting an area that would be comparable to a parking lot in terms of its imperviousness?

THE WITNESS: That is the basic assumption, and it's certainly an approximate number.

THE COURT: But this site is mostly at that time, when you're studying it, unimproved, it is—it's, essentially, dirt?

THE WITNESS: No. It's oiled surface that has a

relative low permeability, and so I had to make a decision—I mean, ideally, what you'd like to do is go out there and measure this for the site as it existed.

THE COURT: The spill points?

THE WITNESS: Not only the spill points, but the site as a whole, when you start getting runoff. So I decided the closest approximation I could do was a parking lot, but it's just an approximation.

THE COURT: And hearing this last witness, you were in the courtroom, he talks about an area that is oiled, but I don't understand that to be the entire site. In other words, the road oil, if you will—and I don't know if it's even sufficient to call it a cap, whatever it was—was applied, and that was a portion of the property but not all of the property. And so your analysis is you took the site as being [35] equivalent to that?

THE WITNESS: Right. This calculation gives the analysis as though it were behaving as a parking lot. And I agree with you completely, that it's really an open question, how you describe it, and I felt that was the best I could do it. But if we—

THE COURT: All right. I'm following you.

THE WITNESS: If we came up with a different number of how much it took, that would be very easy to recalculate, and these numbers would change somewhat.

MR. HELDT: Your Honor, for the record, we would object and strike the testimony, because there is an improper foundation here. And it is clearly shown that this area is not a parking lot, and so the foundation basis for the testimony is inappropriate and should be stricken.

THE COURT: Well, it goes to its weight and not its admissibility. I assume on cross-examination these things will be shown. The objection is overruled.

You may continue.

MR. MacAYEAL: Just for the record, your Honor, I will note that the railroad has in their trial brief called it a parking lot, but we'll leave that aside.

THE WITNESS: But that was merely an assumption. It would be very easy to calculate this with some other number.

And what this shows right here is this is the number [36] of random spills. So the spills seem to occur at random, and this is the probability that you get that one or more of these random spills sees precipitation greater than one millimeter, which I'm saying that is greater that can cause runoff.

And as you correctly point out, it depends on the nature of the surface. And what you find is that if you just have a single spill right here, you have the probability off the tables, which is right here. I found my tables, as a matter of fact, if you want to see it.

But when you look at the probability of one or more spill, that if you get a high number of spills, that—and, also, I left the number of days open, and we should talk about that, because it's an open question.

How fast does DCP evaporate? It depends on how big the spill is. Is it in the shade? Is it in the winter? Is it in the summer? A lot of questions like that.

And, furthermore, it doesn't just evaporate the spill, it evolves over time, so I don't really know how long it's going to stay around. So what I'll do is calculate a range for you. So if you disagree with me, you can choose, and, likewise, I can calculate a range—

rather than the parking lot assumption, we can calculate a greater amount of precipitation to lead a runoff, if you want. And what it says, though, is that if you wait seven days after, that even after ten spills, the probability is [37] almost one, at least one of them will be caught. And if you just look at a one-day lag period, that if you get more than about 50 spills, the probability quickly asymptotes to one.

And in any of these, even if I recalculate and require greater amounts of rainfall to produce runoff, if you get a large number of spills, the probability of at least one of them will be captured by rain and transported down to the waste pond or other focused infiltration site is effectively one.

BY MR. MacAYEAL:

Q. Which means what?

A. Which means that the probability that the leased parcel, if this many number of random spills occurred at the leased parcel, that the probability of the leased parcel contributed to the observed contamination goes to one as the number of spills goes up.

Q. When you say the probability is one, what do you mean by that?

A. The probability is—well, when you calculate it here, what it does is it will calculate 99.9999 whatever certainty that at least one or more of them went down there.

Q. Close to a hundred percent?

A. It goes—asymptotes to a hundred percent. For mathematicians, it doesn't reach it until it goes into infinity out there, but it goes to what, common sense, you [38] would call a hundred percent.

And so, again, I didn't—it was ambiguous how long it would stay until it evaporated, so I calculated a range to show you. And I'd be very happy to go back, and if someone has a different—what's called—what you're talking about the parking lot is called an initial interception—

THE COURT: Let me understand, because I just heard you say something that I'm not sure we can derive from this study. Did you just say that this probability analysis leads to the conclusion of the likelihood that a spill entered the groundwater?

THE WITNESS: What this really says is this is the probability that one or more spills would be captured by the surface runoff and transported the surface runoff. Down the groundwater is an additional step. But this says what's the probability spill will be picked up by the surface water and moved with the surface water to a low spot which is likely to infiltrate.

BY MR. MacAYEAL:

Q. Could you explain the groundwater part of it?

MR. LASATER: Objection, vague.

BY MR. MacAYEAL:

Q. Could you explain your analysis of how it gets to the groundwater, if—

THE COURT: Let's just stay on the first point [39] before we go to the next question.

So this study is one that shows us the probability based on the frequency of random spills, the frequency and volume of a rain that that combination is sufficient to—I'm just going to use the word "move"—the contaminant over the surface?

THE WITNESS: That's basically correct, yes.

THE COURT: So now you want to go from here to

the groundwater?

BY MR. MacAYEAL:

Q. Well, I guess the key thing is, does it relate to the evaporation? In other words, is the water relevant to the evaporation? And explain how that relates.

A. Well, I think what we need to do is move to the situation of—this just looks at can enough water to transport it come before it evaporates. It says that if you have a large number of spills, that it's probable at least one will be picked up by a rainfall.

Q. This is the probability it will be dissolved in water?

A. That it will be picked up and dissolved in water.

Q. And that relates as to whether it will evaporate or not?

A. And that relates as to whether it will evaporate. Now, once it's picked up by the water, the question is transport pathway after that. We haven't really discussed that yet, so [40] I guess that's the next direction you want to go.

THE COURT: I think he was asking you about evaporation, so wait for the lawyer's question.

THE WITNESS: Okay.

BY MR. MacAYEAL:

Q. So this analysis you did, does it relate to whether or not a particular spill will evaporate? Is there—what's the chance of water hitting it so that it will dissolve in the water?

A. Right. This is the chance that it will be—precipitation event will come and pick it up prior to the time it would evaporate. That's really all it said. The judge summarized it very well.

Q. And then is the focused infiltration relevant to the infiltration in the groundwater?

A. Yes. The focused infiltration is the major pathway that I believe that the contaminants of concern got to groundwater, is that they were moved by surface water to points of focused infiltration where they could infiltrate with the groundwater and move with the surface water, infiltrate the surface water, then move eventually with the water down to the groundwater. And—

Q. Let me ask you here. Does this analysis about the evaporation that you did, probability analysis, is that applied to the dinoseb? **[41]**

A. No, it does not apply to the dinoseb. The dinoseb does not have a significant vapor pressure.

Q. Dinoseb doesn't evaporate?

A. Dinoseb doesn't evaporate, so dinoseb just stays put until something moves it. And so dinoseb, if you spill it, will just basically stay put until a precipitation event comes and transports it. And so the probability of dinoseb will be impacted by this precipitation runoff event is one. It doesn't evaporation.

THE COURT: This is D-D we're talking about?

THE WITNESS: This is D-D we're talking about, exactly right. This is D-D we're talking about here. Dinoseb doesn't evaporate, so you could wait for a hundred days or wait for a year. And so then the probability is one right away, so this is for DCP and D-D.

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IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA
HON. OLIVER W. WANGER

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, et al., Plaintiffs, vs. BROWN & BRYANT, INC., et al., Defendants.	NO. CV-F-92-5068 OWW Court Trial, Day 2
AND RELATED CROSS-CLAIMS AND THIRD PARTY ACTIONS	

Fresno, California Wednesday, March 31, 1999

REPORTER'S TRANSCRIPT OF PROCEEDINGS

[Direct Examination of John Walton continued]

* * *

[74]

Q. How did this enter into your analysis?

A. The way it entered into my analysis is I first look at the physical-chemical properties of the compound and how they would move and I determine that if you had no water movement, that the dinoseb would not tend to move to the groundwater table. And that in order for DCP or D-D to move to the groundwater table without any movement of water, you would have to have a fairly large spill, fairly large spill. Because if you have a fairly large spill, then the D-D or DCP would move as a liquid, organic liquid on its own down, but that takes a fairly large spill.

However, the DCP is very soluble in water, and so if [75] you have regular movement of water, then the DCP would dissolve in the water and move with the water towards the water table. And so it would move towards the water table.

And so my analysis was that the pathway that would take small spills of DCP or other spills of dinoseb to the water table would be to migrate with the water, because it's—for the organic liquid to go on its own, it takes a great big spill.

So that's the situation I looked at and I looked, do you have this infiltration of water, do you have water at the site, and we talked about that yesterday, and there is enough water at the site to supply this infiltration scenario. One of the most obvious places at the site is the waste pond. And every expert who has worked on this case has said that the waste pond is a major source or location of communication with groundwater. The contaminants get in the waste pond and they move down into the groundwater. That has not been a point of contention. Railroad experts have said that, Shell experts say that. I say that as well. That was not a point of contention and so I didn't look

at it in any more detail, but that's the other scenario.

THE COURT: At what level for the points of reference is the water table under this property?

THE WITNESS: It's not a completely simple answer. There is what's called the A zone groundwater that's about 60 [76] or 70 feet below the ground surface, and that's what we called the perched water level. That is, you get water there because there's a clay layer, stops the water from going down and there's air beneath that and perched zone below that until you get down to lower ground.

THE COURT: Where is the lower groundwater, at what depth?

THE WITNESS: The lower groundwater is couple hundred feet down, I believe. Most of the data you are seeing in this case will be for what's called the A zone, which is this perched water that's about 60 or 70 feet deep. That's what we are pretty much focused on.

THE COURT: And I assume for the plume that we are talking about, that that is diagrammatically represented somewhere.

MR. MacAYEAL: Yes. Different people have tried to draw that plume and different experts will address that.

THE WITNESS: Exactly correct. Is that most of the expert reports have a bunch of pictures that depict that plume.

BY MR. MacAYEAL:

Q. Now, as far as your analysis is concerned, you looked at the infiltration of water and how that affects this equilibrium and you examined what would happen if there were contaminants in that water solution in the subsurface?

A. I looked at what would happen with contaminants and based [77] on the properties of the contaminants, they will behave differently during this infiltration. One infiltration is at the waste pond.

Another case of these focused infiltration spots, where the water puddled down where there is someplace, there is a flaw in the surface and it infiltrates lower and you have a series of rain events that put water into this spot over time. And so you now have system where the water there is migrating down to the groundwater table.

And if you look at the properties of the compounds, if you look at dinoseb, it has a moderate solubility, so what you would expect is that if you have a small spill of dinoseb, that perhaps all of it would be dissolved and move downward with the water. Larger spills of dinoseb, some portion of the spill would be dissolved in the water and move down into the subsurface, and if you came back later on, years later, and you expect to see if there were dinoseb spills, that there was a fair signature of dinoseb at the surface that wasn't all gone and in the shallow subsurface, that is, the water would take it down, but some residual or trace amounts would remain behind.

The DCP behaves differently. It has different properties. It's very soluble in water and so it tends to all readily dissolve, unless you have a very large spill, and—but at the same time it has a high vapor pressure and a high Henry's law constant.

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[259]

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ROBERT MANDEL,

called as a witness on behalf of the Plaintiffs, having been first duly sworn, testified as follows:

THE CLERK: Please state your name and spell your last name.

THE WITNESS: Robert Mandel, M-A-N-D-E-L.

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IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA
HON. OLIVER W. WANGER

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, et al.,	NO. CV-F-92-5068 OWW
Plaintiffs,	Court Trial, Day 3
vs.	
BROWN & BRYANT, INC., et al.,	
Defendants.	
AND RELATED CROSS-CLAIMS AND THIRD PARTY ACTIONS	

Fresno, California Wednesday, April 1, 1999

REPORTER'S TRANSCRIPT OF PROCEEDINGS

[Direct Examination of Robert Mandel continued]

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[339]

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THE COURT: Cross-examination?

MR. LASATER: Yes, your Honor.

CROSS-EXAMINATION

* * *

[359]

* * *

BY MR. LASATER:

Q. Now, staying on this topic of the leased property. Now, [360] when I'm referring to the term "leased property," do you understand me to be talking about the area to the west of the warehouse up until the west fence line?

A. Yes, I do.

Q. That area was set up as the clean area for the TAT mobilization; is that correct?

A. Yes, it was.

Q. So within the TAT report itself, there's a map that shows the area west the warehouse, and north is designated as "clean area"; is that right?

A. It's a relative term. "Clean" meaning cleaner than other areas.

Q. And it was clean enough to designate on the map and to utilize for people to go there and park their cars and be in civilian clothes and to walk around and be safe; is that correct?

A. That is correct.

Q. There was a determination in making it the clean area that it was not a hazard to human health or the environment in general; is that correct?

A. I don't know if I would characterize it as—I mean, the entire site was a hazardous waste site. In

terms of employee health and safety, we try to find the safest place for them to park cars and to maybe change clothes and things like that. It doesn't mean that it's a safe place.

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[389]

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DON WOODY,

called as a witness on behalf of the Plaintiffs, having been first duly sworn, testified as follows:

THE CLERK: Please state your name and spell your last name for the record.

THE WITNESS: Don Richard Woody, W-O-O-D-Y.

THE COURT: Ms. Johnson, you may proceed.

MS. JOHNSON: Thank you, your Honor.

DIRECT EXAMINATION

* * *

[411]

Q. Okay. And let me ask you, before you took any samples, did you visually inspect the property?

A. Yes.

Q. You physically walked around? Did you see any visual signs of contamination?

A. Yes, I did.

Q. What did you see?

A. I saw various piles of green, yellowish-green powder which later turned out to be dinoseb. We saw some oil stain—or some staining, perhaps is a better word. And lots of signs of just spillage and bad

housekeeping.

Q. Okay. Did you see any of this, what you have learned later to be dinoseb on the railroad property?

A. Yes.

Q. And that was before you began any of your surface investigation?

A. That's correct.

Q. During the surface investigation, did you also take surface water samples?

A. Yes.

* * *

[449]

* * *

Q. Now, the property west of the warehouse as shown on Exhibit 687, the so-called leased property, that area, particularly in the northern part, was initially designated as the safe zone; is that right?

A. I believe that's correct.

Q. Or actually I've misspoke. It was designated the clean area; is that right?

A. Yes.

Q. Well, let me, so that we'll both be on the same page, let me show you Exhibit 1034. And I'm directing your attention to figure 22, which is EPA 201820.

A. I have it.

Q. That's entitled the "Site Safety Map"; is that right?

A. Yes.

Q. And the clean area is designated there with the hatched lines; is that right?

A. Yes.

Q. Did you prepare this map?

A. It was prepared by our site safety people.

Q. And you incorporated it within this report?

A. Yes.

Q. You're the author of this report, 1034?

A. I'm the one who orchestrated putting it together. There were several authors, but, yes, I put it all together and they [450] laid it out to make sure that it came out in the state that you see it now.

Q. In the text on the prior page to this site safety map, under the section 15.0 where it says "Prefield Activities," do you see that?

A. Yes.

Q. In the third sentence in that paragraph just below that heading it says, "The northwest area." Let me stop there. The northwest area was the area that's indicated as the "clean area" on figure 22; is that right?

A. That's what it says, yes.

Q. "The northwest area on the site was designated as the clean area to be used for parking and accepting deliveries."

Was that an accurate statement?

A. Yes.

Q. And when you say "accepting deliveries," that was deliveries of what?

A. Various equipment and documents that would come via Fed Ex. It wasn't like large delivery trucks or anything like that.

Q. And these people would come in the main gate and park in the clean area and then where would they go?

A. There was a doorway south of the—I'm trying

to see what that says, "covered area parking." There was a single—a normal door where people could walk through just south of that covered area.

* * *

IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA
HON. OLIVER W. WANGER

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, et al., Plaintiffs, vs. BROWN & BRYANT, INC., et al., Defendants.	NO. CV-F-92-5068 OWW Court Trial, Day 5
AND RELATED CROSS-CLAIMS AND THIRD PARTY ACTIONS	

Fresno, California Tuesday, April 6, 1999

REPORTER'S TRANSCRIPT OF PROCEEDINGS

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[753]

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JOHN BROWN,

called as a witness on behalf of the Plaintiffs, having

been first duly sworn, testified as follows:

THE CLERK: Would you please state your name and spell your last name.

THE WITNESS: My name is John H. Brown, B-R-O-W-N.

THE CLERK: Thank you. You may take the stand.

THE COURT: You may proceed, Mr. MacAyeal.

MR. MacAYEAL: Thank you, your Honor.

DIRECT EXAMINATION

* * *

[764]

Let me just get the witness to identify this.

I hand you Exhibit 1070. I'll direct you to the second page. Are you familiar with that document? Have you seen documents like that before?

A. Yes, I have, yes.

Q. Does that look like a Shell marketing agreement that you had—that Brown & Bryant had with Shell?

A. Yes, it does.

Q. I direct your attention to the second paragraph which states, "Shell's objective in making this agreement with you is to maximize penetration of Shell's pesticides in the area of your primary marketing responsibility." Do you see that?

A. Yes.

Q. What did you do to make that happen, to help Shell penetrate into the area of marketing?

A. Well, we represented them as a distributor for their products and had all the equipment and everything necessary to apply their products and to

sell their products in the Kern County.

Q. Now, I direct your attention to paragraph three about Brown & Bryant's responsibilities which required you to "Maintain adequate inventories of Shell pesticides in order to provide prompt shipments to customers throughout your primary area of responsibility." Do you see that?

A. Yes. **[765]**

Q. Now, what did you do, if anything, to meet that obligation, that is, to maintain inventories?

A. Well, to maintain D-D inventory, we had to buy bulk tank, keep it in good order so that we could store D-D for—in adequate amounts to be supplied to the farmers. We had a warehouse, and we maintained Shell products both at Arvin and in Shafter for—so that we could sell it in Kern County.

Q. Now, paragraph four makes reference to—it says, "Bring in your key pesticide personnel for a Shell instructed one-day meeting when mutually beneficial. The purpose of these meetings will be to review with your personnel the technical aspects of Shell pesticides as well as pertinent marketing information." Do you see that?

A. Yes.

Q. Did anything like that happen in your relationship with Shell, technical meetings?

A. Oh, yes, we had those meetings quite often.

Q. Tell us—

A. Sometimes they would be—when I first went to work for Brown & Bryant, we would have them in the evenings, maybe—probably for Shell, we would maybe have two a year of what we call real technical meetings where we get something on nematocides or

nematodes or something like that. Later on we would maybe have something about spraying of cotton, either lygus, worms, things like that. Then we would have luncheon

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[777]

* * *

Q. And you had this pond down at the southeast corner of the facility?

A. That's correct.

Q. Now, that pond was not lined at that time, was it?

A. It was unlined at that time.

Q. Was there any type of a berm around it or not?

A. There might have been a small berm around it, but it collected all the rainwater, too, so the water had to run into it.

Q. What was the purpose of that pond? [778]

A. The pond was really just to collect rainwater.

Q. And that was from the entire plant?

A. Yes.

Q. Now, as of 1978, you had moved over onto the railroad parcel, correct?

A. Oh, sure.

Q. Just one thing. You were out at the Arvin facility before you moved over onto the railroad property, correct?

A. Yes, I was.

Q. And you also were involved in the purchase of the—what later became the Brown & Bryant parcel from the Derbys?

A. Yes, I was.

Q. Did you have occasion to become familiar with where the property line was between the Brown & Bryant parcel and the railroad parcel?

A. Do I know where it was?

Q. Yes.

A. Yes, I do.

Q. Could you just tell us generally in connection with the warehouse, how did the warehouse—where did the warehouse sit in reference to the property line?

A. The warehouse was on the property line because there wasn't a fence on the west side of the warehouse. The fence went to the north end of the warehouse and started again on the south end. **[779]**

Q. Now, you had—there was a railroad spur that ran up along to the warehouse, correct?

A. Yes, there was a—on the west side there was a railroad spur that went clear up into the main warehouse at one time.

Q. Now, did you have an agreement to allow that to occur with the railroads—prior to your lease in 1975, was there another agreement that—

A. There was some kind of an agreement about the railroad spur, but it belonged to them. We built it, I think, but it belonged to them.

Q. The railroad spur was on their property?

A. Yes.

Q. The railroad's property?

A. Yes.

Q. Now, do you recall, though, leasing the railroad property, the west of the warehouse, correct?

A. Yes.

Q. What was the reason you needed that property, if any?

A. We were growing quite a bit and we had run out of space. We needed more room, that's why we rented.

Q. Now, the railroad parcel, did it drain into the pond, too?

A. Yes, it did.

Q. Did you take any steps to assist that process?

A. Yes. We graded the railroad property to run to the south and then cut across underneath the tracks. We even put a pipe **[780]** underneath the tracks to channel the water over to the Brown & Bryant property and down to the main pond, the drainage pond.

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[783]

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Q. Now, do you recall, however, in 1979 that there were—you had a contact with representatives from Shell?

A. You're going to have to be a little more specific.

Q. Do you recall whether there was an inspection of your plant by Shell in the summer of 1979?

A. Yes—

MR. EARLE: Objection, lack of foundation. Which facility?

MR. MacAYEAL: Arvin facility.

THE COURT: Sustained.

BY MR. MacAYEAL:

Q. In 1979, you were at the Arvin facility, correct?

A. Yes.

Q. Do you recall an individual by the name of Bob Swain?

A. Yes, just barely. They inspected both facilities at the time. Shell came out with some, in my opinion, dramatic new ways of handling D-D, D-D storage, and things like that at this time.

Q. What do you recollect—what context did you have with Shell on these subjects?

A. Well, we had a meeting with Shell. It was—it wasn't [784] just me, it was the company, our company meeting, and it might have been other companies. I don't think there was. Anyway, they delineated a lot of new things that they wanted done as far as the handling of D-D was concerned.

Q. What type of things were they?

A. Well, they wanted the D-D tank used with what they call like a closed system where you couldn't vent to the outside. They wanted the D-D tank to be put into an impervious enclosure so that it set inside of a dike, but impervious on our concrete deck where it—it was impervious to the ground but it was also diked to hold any spills.

They wanted our field equipment to be put into what they call a closed system where—it's kind of like when you fill your gas tank today in a service station, you put fluid in and air comes out, but it—the air goes right back to the tank that the gas came out of, and that's what we call a closed system.

* * *

[792]

* * *

Q. Was there a location where—tell us—describe the procedure under which product was delivered in the bulk tank, the Shell D-D, that is.

A. Well, Shell D-D would come in a commercial carrier, which is a tanker truck. And they—although the tanker trucks were supposed to be stainless steel, sometimes they would be aluminum, which was not really what they were supposed to be, but they would come in a double—set of doubles, two trailers.

And they would come into our warehouse and we would hook up to them sometimes with a two-inch or maybe a three-inch hose, hook up to the trailers and turn on the pump and pump the D-D into our tank. If the trucker supplied his own pump, then he would come in and just hook up to our tank and turn on his pump and pump the D-D into our tank.

Now, if the trucker pumped D-D into our tank, when he hit the bottom of the tank of his trailer, there would be no—he would be pumping air, and on the discharge side of his pump, he wouldn't have any pressure to push that hose full of liquid out. So when he stopped and uncoupled, he had a hose, whatever size that hose was, either two or three inches, whatever length it was, ten, you know, five to ten feet, that would be for the [793] liquid.

And that liquid had to go someplace, so normally they would have a bucket and they would pour it into the bucket and pour it back into his truck, or sometimes we had a tank sitting there and he would pour it into a tank that we had there to catch what we call "dregs."

Q. Let me show you what has been—what is in evidence as Exhibit 1123. I ask you first, again, if this Exhibit 1123 appears to be the type of document you received from time to time from Shell?

A. Yes, it is.

Q. Now, I direct your attention to a—this is a document entitled an "Outline of General Guidelines for D-D Soil Fumigant Bulk Installations." And I direct your attention to Bates page S003568, and it's Exhibit 1123. It's—purports to be a 1981 manual, and there is a category entitled "Miscellaneous Information." I will just read it.

> First item says, number 1, "Commercial carriers usually deliver through a three-inch cam-lock female fitting. If your pump has sufficient capacity, you can use it to off-load the carrier and, in so doing, the carrier's hose will be drained. If the carrier's pump is used, the hose between the pump and your tank will remain full and must be drained back into the truck or other suitable container." **[794]**

Do you see that?

A. Yes, I do.

Q. Is that what you are talking about?

A. Yes, that's exactly what I'm talking about.

Q. Now, did you ever have occasion to see any spills in connection with this downloading process where a bucket was used?

A. Almost every time.

Q. Now, when the D-D tank was all corroded and no longer good, did you have to replace it?

A. Yes, we did.

Q. And that happened from time to time, correct?

A. That happened from time to time.

Q. Now, when you were in the process of replacing that D-D tank, did you have to take measures to find some other location to store the material?

A. Yes.

Q. What measures?

A. If the tank leaked for any reason, which it did from time to time, it leaks not only just because it was worn out, it would develop a leak at the pump or you might develop a leak at a valve or anything, you would have to pump the tank out into trailers.

Sometimes we would use 2,000 gallon trailers or 2500 gallon trailers or even milk trailers, pump it into trailers [795] and hold the D-D temporarily while the repairs were made, even if it was—meant a new tank, you know.

Q. These trailers were portable?

A. Yes.

Q. And would you store them in various locations around the plant?

A. Yes, we would store them, you know, anyplace in the plant where we could, where we had room.

Q. Do you recall whether they were ever stored over on the western side of the warehouse?

A. Yes, I can remember being stored over there.

Q. Now, let me turn your attention to Exhibit 1075, which is in evidence.

THE COURT: When you say every time there was a loading or pumping there were spills, what are we talking about in terms of quantity?

THE WITNESS: Well, could be anywheres from, oh, maybe a half a cup to two quarts, maybe even a gallon, sir.

THE COURT: Thank you.

BY MR. MacAYEAL:

Q. I'm directing your attention to Exhibit 1075, which is a multi-page exhibit. It's in evidence. And I'm directing your attention to page 30, to the handwritten number page 30, and there is a—an item 6, which I will read to you. I just want you to look at it briefly. [796]

A. Okay.

Q. You see that?

A. Uh-huh.

Q. I'm going to read it and then I will ask you about it. All right. This is—quote—this is from a Shell document. It's from a folder that appears to be Shell bulk herbicides, and up at the top it says, item number 6, "Shrinkage."

MR. EARLE: What page?

MR. MacAYEAL: Page 30, which is a handwritten page, which is from Exhibit 1075.

> Item 6, "Shrinkage. Single and multiple destination deliveries by common carrier will be allowed a .5 percent on a weight basis for shrinkage that may occur at time of unloading. The shrinkage allowance will be deducted off the billing invoice."

BY MR. MacAYEAL:

Q. Do you see that?

A. Yes, sir.

Q. Now, was there in the industry a general practice of these so-called shrinkage allowances?

A. Yes, there was on bulk liquid items. Fertilizers had shrinkage allowances. D-D obviously did. And I know in fertilizer it was very common.

Q. All right.

MR. EARLE: Move to strike the reference and the [797] testimony as inflammatory and prejudicial on the grounds that this particular document is beyond the date that Shell exited the D-D market. Shell exited that market in approximately 1983-1984. This is a 1986 bargaining agreement. It, therefore, has no relevance to this case or this product or these deliveries.

MR. MacAYEAL: The document is in evidence, your Honor. I'm just asking the witness a general question.

MR. EARLE: The document doesn't relate to any time period during which D-D was delivered.

THE COURT: All right. Let us take it one step at a time. First of all, if the document is in evidence, is its relevance that it is a prototype?

MR. MacAYEAL: Yes, your Honor, I was just asking him to explain his understanding of that concept as it existed in the industry generally, and I'll lay a foundation for the time period.

MR. EARLE: Your Honor, we have documents from the time period. He doesn't need to utilize this prototype.

THE COURT: Well, I'm only dealing with the exhibit from the standpoint that it's in evidence. And so if there was an objection to it, assumedly that would have been asserted. Apparently it was not. And so if the item is in evidence, it can be referred to, unless you are making a motion to withdraw it from evidence. [798]

MR. EARLE: I will make that motion, your Honor. I did not realize, when the document was originally propounded, that it was a 1986 agreement that postdates this case.

MR. MacAYEAL: Judge, we relied on their representations that they had no objection. We probably would have designated other deposition testimony.

MR. EARLE: Your Honor, there is no doubt, your Honor, but it is a Shell document, which is why—and it's genuine, but it has no relevance.

THE COURT: Well, I'm going to permit it to remain in evidence on the representation of Mr. MacAyeal that it is a prototype of the type that was in use, and then the witness has stated that he recognizes the practice of shrinkage, and so that's where we are at this point.

So I recognize that it's an '86 document and that Shell stopped its D-D operations—although I don't think I have heard that evidence yet, but that's going to be, that's the offer of proof—in '83-84.

* * *

[800]

Q. Now, getting back to the Regional Water Quality Control Board, you remember them, they were doing the inspection? Did you have a cage out at the plant near the UN-32 tank where you stored cans?

A. I'm sorry?

Q. Do you remember having an enclosure of some kind for can storage?

A. Oh, yes, okay.

Q. What were these—were these cans that had been used, opened?

A. Yes. These were empty cans.

Q. And some of them you stored in an enclosure?

A. Yes, yes.

Q. What was the reason for—

A. Well, we stored some of them, cans, in a wire chain link enclosure, and kept it locked up because some of those cans had contained highly toxic pesticides and we didn't want anybody to get near those cans until they could be crushed and properly disposed of.

Other cans that we didn't consider, you know, so dangerous, so to speak, we would keep in a—over in another area. Mostly they were kept on the west side of the plant up against the fence.

Q. What type of cans were those that you kept over there on the west side? **[801]**

A. Oh, they would be like herbicide cans and things like that that we didn't consider so highly toxic.

Q. Dinoseb?

A. Dinoseb cans, yes.

Q. What about Nemagon?

A. Probably Nemagon cans too.

Q. Now, do you recall having discussions with the Regional Water Quality Control Board about putting a liner in that caged area?

A. They wanted—wherever we stored pesticide cans, no matter whether we considered them highly toxic or not, they wanted our pesticide—can storage area set with an impervious deck, so we would pour a concrete deck or some other type of impervious material, and they wanted it all fenced so that cans of any kind could not be easily gotten to.

Q. Did you have room to accommodate all the cans, though?

A. Well, no, we didn't. We had to enlarge the area and—

Q. Now, did they also come to ask you to—what was your proposal to the Regional Water Quality Control Board about how you would handle the sump and the pond?

A. Well, we—when the Regional Water—they asked us for a proposal, so first we started out, we were thinking about just lining the sumps, which were right next to the wash racks in the middle of the yard. We were going to put those in concrete, and then try to cut down the amount of water that we

* * *

[821]

* * *

BY MR. MacAYEAL:

Q. Mr. Brown, I'm going to hand you, again, Exhibit 1123, which is in evidence, and just to refresh your memory, this is a December 1981 set of guidelines on D-D. Do you see that? Have you looked at that earlier?

A. Yeah.

Q. Okay.

A. I see it.

Q. All right. Now, I'm going to direct your attention to Bates page S003566. It's Exhibit 1123. Now, let me just show you this page before I begin. There is an entry about a gauging device, do you see that?

A. Yeah.

Q. See that?

A. Yes.

Q. Now, there is an entry number 4. The first

entry, rather, says it's a reference to gauging devices, and there is four items, and the first one is for a non-sparking calibrated stick. Second one is for a gauge tape. Third is for a bubble or float gauge.

And I direct your attention to the fourth, which is referred to as a "sight tube, (a poor but acceptable alternate)." And then there is (a) that says, "Tube material must not be attacked by tank contents or the natural [822] environment (sunlight)." Do you see that?

A. Yes.

Q. Now, is it your recollection that the—the various rigs that you had, the D-D rigs in particular, had sight gauges?

A. Yes.

Q. And what do you recollect those were? Can you describe what material they were made out of?

A. Sight gauges were made out of Corlon tubing, a type of plastic.

Q. And do you recollect whether there was any particular problem with those sight gauges breaking?

A. Corlon tubing was a—is a plastic, and it's fairly stiff, it's not too flexible. It would withstand D-D and D-D could not melt it, like it did most plastics. However, it was not very tolerant to sunlight, and it would get hard and brittle after a period of time, and sometimes even a hard wind would crack it. And then if there was anything in the tank, the way a sight gauge works is you have a hole at the bottom for the liquid to come up and give you a liquid level and you have a hole at the top to let the air out. So that any air gets in the tube as it fills up, the tube fills up. Well, if the tank was half full and the tube broke at the bottom part of the tank, the tank would run out very slowly,

but it would run out.

Q. Do you have any recollection of having to replace those sight gauges from time to time? [823]

A. Yes, you had to definitely replace them from time to time, and sometimes we weren't quick enough to do it and they would break and we would lose material.

Q. Would you ever come back to the plant in the daytime and see the results of a spill from the prior night?

A. Oh, yes. Yes, I have. Sometimes on a very large tank.

Q. Now, did you have those sight gauges on the D-D pull rigs?

A. Yes, we had them on the D-D nurse tanks, pull rigs, yes.

Q. And were those tanks ever stored over on the west side of the warehouse?

A. Yes, they were.

Q. I'm going to direct your attention to Exhibit 1216. We have a lot of exhibits that are like this. I will hand it to the witness. I hand you Exhibit 1216. Have you ever seen a document like that before or a group of documents like that?

A. Yes, I seen this—documents just like this before.

Q. What are those?

A. That's a purchase order issued by Brown & Bryant for—this one here specifically is for D-D soil fumigant to Shell Chemical.

Q. All right. Now, I direct your attention to the last page of the exhibit, page 6, six-page exhibit. Do you see that?

A. Yes, I do.

Q. And is there a reference to a—an evaporation allowance?

A. Yes, there is. [824]

Q. Can you tell us what it says?

A. Looks like it's just $122.54. Would be 1 percent, I guess, huh?

* * *

[829]

* * *

You could get rid of these cans by triple-rinsing them and taking them to a county dump or later you could take them to a Class I dump, but at that time we didn't want to triple-mix them and mix that with our rinsate, so we were crushing the cans.

In order to store these cans for up to a year while we were waiting to get a whole dump truckload, we applied for a TSD so we would be legal in storing them for a year.

Q. Did you store these cans over on the railroad property?

A. Yes.

Q. All right. Now, when the Department of Health Services came over and inspected your plant—let me back up The Regional Water Quality Board wanted you to make some improvements, they wanted you to line the sump and pond?

A. We had already done that, though.

Q. Now, do you recall whether or not you moved your rinsing facility from the area where the sump was to another location, the contained rinse area? That's

what I'm talking about.

A. Well, I think—this was after the Department of Health Services, we were under investigation, and then under the Department of Health Services order for—to do a study and everything. Then we built a contained rinse area on the—it would be on the north side of the plant, the north side of the tank farm there.

* * *

IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA
HON. OLIVER W. WANGER

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, et al.,	NO. CV-F-92-5068 OWW
Plaintiffs,	Court Trial, Day 6
vs.	
BROWN & BRYANT, INC., et al.,	
Defendants.	
AND RELATED CROSS-CLAIMS AND THIRD PARTY ACTIONS	

Fresno, California Wednesday, April 7, 1999

REPORTER'S TRANSCRIPT OF PROCEEDINGS

[Cross-Examination of John Brown continued]

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[846]

CROSS-EXAMINATION (Resumed)

* * *

[854]

BY MR. LASATER:

Q. Now, what is your earliest memory of when this unlined sump was used as a washout area for the Arvin operations, the unlined wash rack sump?

A. My earliest recollection was sometime in '64.

* * *

[923]

* * *

Q. Now, if I can direct your attention to Exhibit 391.

A. Yes, I have it.

Q. Is this also an aerial photo of the Brown & Bryant Arvin facility?

A. Yes, it is.

Q. And is there a numeral 4 and a circle over the UN-32 tank?

A. Yes.

Q. And right on the crease there is a tank that appears to be inside a concrete containment. Do you see what I'm referring to there?

A. Yes.

Q. It's just to the left of the tank that has the numeral 5 circled on top of it, do you see that?

A. Not on mine, it doesn't have 5. It has a 3, I think, that's in the containment area.

Q. 3 is in the containment area and 5 is just to the right of the one that has the 3 on it; is that right?

A. Yes, it is.

Q. And the tank that has the number 3 on it, what was that tank? [924]

A. Well, that was either a D-D or a Telone tank, I'm almost positive. After D-D went out, we sold Telone for a while.

Q. Is that the containment and the tank that was put in place as a result of the Shell Bulk Facilities Improvement Program?

A. Yes, it is.

Q. And was Brown & Bryant reimbursed by Shell as a part of that program for putting in that tank and containment system?

A. Yes, they were. They received payments for it, I don't know if complete. That, I'm not aware of.

Q. You're saying that Shell reimbursed Brown & Bryant to some extent, you're just not personally aware to what extent?

A. That's right.

Q. And if you'll look at the area on this photo that has the numbers 11 and 12 circled in handwriting, do you see those?

A. Yes, I do.

Q. Are those the two pads for the contained rinse system?

A. Yes, they are.

Q. And the pad number 12 was a flat concrete pad that you could drive a truck or a trailer onto going east or west; is that right?

A. Yes. It was not really flat, though, it was kind of angled down, it had a little low spot in it.

Q. And it had a bar trench with a graded top over it?

A. That's right.

Q. And that's what you called the sump? [925]

A. Yeah, small sump.

Q. The small sump for that facility?

A. That's right.

Q. And the northern one, number 12, was used as a pesticide rinse area; is that right?

A. As I remember, that was the pesticide side of the rinse system, yeah.

Q. And that went into that black open top tank that's between 11 and 12; is that right?

A. Yes, I think so.

Q. And there were spray nozzles inside of that to promote evaporation of the contents of that tank?

A. Yeah, there was a spray nozzle in there, yes, to try to evaporate any water that was in that.

Q. And then pad number 11 was constructed similarly to that of number 12, meaning it was sloped to a bar, concrete bar trench at one end; is that right?

A. Yes.

Q. And 11 was used for rinsing the fertilizer tanks and equipment; is that right?

A. As I remember it, that's right.

Q. And that's the main warehouse directly to the west of that contained rinse area; is that correct?

A. Yes.

Q. And I have one other question. See here along the north **[926]** fence line where there's a number 18 in a circle with an arrow pointing to a piece of equipment there.

A. I've got two arrows on mine.

Q. Okay. Is the equipment along that north fence line just to the west of the main gate, are those D-D pull rigs?

A. It's hard to say. I think they are, but they could be ammonia pull rigs too, but they look like D-D pull rigs.

Q. Was that the location where D-D pull rigs were typically parked?

A. Yes, we parked, yeah, D-D pull rigs there.

* * *

[932]

* * *

Q. Now, is it accurate to say that you have no personal [933] knowledge of D-D spills on leased—on the railroad leased property, personal knowledge?

A. That's accurate.

Q. Is it also accurate to say that you never saw fresh puddles of chemicals on the leased property that appeared to you to have come out of tanks or trailers?

A. Fresh puddle?

Q. Fresh puddles.

A. Yes.

Q. Is it accurate to say that you never actually saw releases from sight gauges on the leased property?

A. I can't remember any that I saw.

Q. And you have no actual personal knowledge of releases of EDB-containing products on the leased property?

A. EDB, no.

Q. Nor do you have personal knowledge of the release of products containing DBCP on the leased property?

A. No, I have no knowledge.

Q. And nor do you have any actual personal

knowledge of the releases of puddles that contained 1,2-DCP, 1,3-DCP or 1,2,3-TCP on railroad leased property?

A. That's D-D?

Q. Yes.

A. No, I don't have any actual, no.

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[980]

* * *

Q. Okay. Do you recall whether Shell Oil Company or any of its representatives ever suggested that Brown & Bryant employees should take control of the unloading of common carrier tanks of D-D in order to ensure that there were no spills in connection with that process?

A. Not really. I think Al was involved in that far more than I was.

Q. I'm going to direct your attention to Exhibit 1123.

A. Twenty—

Q. Three. I'm going to ask you to look at page S003568. There is a title "Miscellaneous Information."

THE COURT: Counsel, what was the exhibit?

MR. EARLE: 1123, your Honor.

THE COURT: Thank you.

BY MR. EARLE:

Q. Do you ever recall being advised that "Commercial carriers [981] usually deliver D-D through a three-inch cam-lock female fitting. If your pump has sufficient capacity, you can use it to off-load the carrier and, in so doing, the carrier's hose will be

drained"?

MR. LASATER: Advised by whom?

BY MR. EARLE:

Q. By Shell Oil Company or any representative of Shell Oil Company.

A. No, I don't ever recall being advised. I knew that from unloading them myself.

THE COURT: How was the unloading?

THE WITNESS: I unloaded them myself sometimes, sir, years ago.

THE COURT: How did you do this to avoid spilling?

THE WITNESS: I did it with our pump. But they had a three-inch cam-lock fitting on them and we had a three-inch hose.

THE COURT: And the pump obviously pressurizes the liquid coming out of the tank that's delivering, so what do you do to stop the hose from leaking when you disconnect?

THE WITNESS: That was always the problem, your Honor. That was always the problem. I would like to know.

They did eventually develop what they call—and it might have been around for a long time, they had a dripless coupling. Had a ball bearing like a hydraulic coupling or an [982] air coupling, but to get one in stainless steel and vikon steel for D-D was prohibited for a long, long time.

BY MR. EARLE:

Q. Again, Mr. Brown, directing your attention to Exhibit 1123, wasn't the point of the first sentence in paragraph 1 that if you put the pump on the tank side as opposed to the truck side, that it will drain the hose

in connection with the pumping before it runs out of product?

MR. MacAYEAL: Objection, your Honor. Asking the witness what the meaning of this document is, and he didn't write it, what the intent of the writer is.

MR. EARLE: I will rephrase the question.

THE COURT: Well, we are on H-1 on page 5?

MR. EARLE: That's correct, your Honor.

THE COURT: Did you understand this question, Mr. Brown?

THE WITNESS: Yes, I understand it, your Honor.

THE COURT: Does it have any applicability to your operation?

THE WITNESS: Yes. You never get it all, that's all I can say. You never get it all.

BY MR. EARLE:

Q. Are you familiar with a term, sir, called "walking the hose"?

A. Pardon? [983]

Q. Walking the hose?

A. Yeah, I have seen it done. Done it.

Q. Why don't you describe for me what it means to walk the hose?

A. Well, you take the hose and disconnect it from the nurse tank, or the cargo tank, the common carrier. And then you are running the pump, and as you run the pump, you walk the hose down and try to drain every bit of it into the pump and to get all that in the tank. But when you walk the hose down, then you have to be able to shut it off and then shut off your pump, keep the pump pumping all the time for the pressure, and this is possible, and you can get most of it, but you'll never get

it all. That's why they had buckets.

Q. And using a bucket it's possible to get it all, isn't it, sir?

A. Pretty much so, but I have seen them walk the bucket, too, and then the bucket fell over, so. (Witness shrugs)

Q. Did you ever consider putting a pad in the area of the tank delivery system, a concrete pad?

A. No, I don't remember even considering that.

Q. It would have been possible to put a mini dike containment system in the area where D-D was delivered, would it not?

A. Yes.

Q. It would have been possible to correctly walk the hose and collect what little bit was left in a bucket and carry that to [984] an appropriate place to dispose of it or save it for an application, wouldn't it?

A. Yes.

Q. So spills were not inherent in the process of delivering D-D, were they?

MR. MacAYEAL: Objection, your Honor. There is two different practices. There is when the pump is on the truck pushing it through the hose and then there is the alternative, when the pump is at the tank sucking it dry. Which practice is he talking about?

MR. EARLE: I will rephrase the question.

THE COURT: Sustained.

BY MR. EARLE:

Q. Mr. Brown, I thought we had just talked about both practices, whether the pump was on the tank—excuse me, the pump was on the tank side or whether the pump was on the trailer car side, and I thought we had determined that under both of those scenarios

there were methods available to deliver the product and not spill; isn't that true?

A. What do you call a "spill"?

Q. Release it to the ground where it can go to the groundwater.

A. I don't think that any way you get it you could get away without spilling, you know, at least a half a quart.

Q. I thought you just told me five minutes ago that you would [985] have prevented it from hitting the dirt if you put in a little concrete containment system in the area where it was delivered.

A. We didn't have one.

Q. But that wasn't because Shell Oil Company told you not to build one, was it?

MR. LASATER: Objection, argumentative.

THE COURT: Overruled.

THE WITNESS: No. Shell never told me not to build it.

BY MR. EARLE:

Q. Spills are not inherent in the process. My point is, sir, weren't there steps you could have taken, if you chose, so that you never had to spill a drop of it on the bare ground?

MR. LASATER: Objection, your Honor, to the word "inherent" as being vague, both in the sense of is it foreseeable that, in fact, humans operating the system will do it.

THE COURT: Did you consider putting in a containment system?

THE WITNESS: No, sir.

THE COURT: And what was the reason for that?

THE WITNESS: It never appeared to be that big of a problem.

THE COURT: Thank you.

BY MR. EARLE: [986]

Q. Do you recall an employee by the name of Charles Dickey, a Brown & Bryant employee?

A. Yes. Yes, I do.

Q. You say that with a bit of humor.

A. Well, he was a very funny guy.

Q. Took a shower in D-D, I understand it?

A. Pardon?

Q. Took a shower in D-D, I understand it?

A. I don't remember him—I remember another employee that did it.

Q. His duties to deliver fertilizers and fumigants kept him in the yard quite a bit, didn't they?

A. Yes.

Q. Now, you testified yesterday that D-D was spilled every time it was delivered; do you recall that testimony?

A. Yes.

Q. Were you out there every time it was delivered?

A. No.

Q. How do you know that?

A. I—just from my own experience and seeing it done so many times that I think every time you brought in a bulk load, you were going to spill some of anything, fertilizer or anything.

Q. Charles Dickey testified that he never saw a common carrier spill D-D on the ground while it was unloading. Can you explain his testimony in light of

yours? [987]

MR. MacAYEAL: Objection. Assumes a fact that's not in evidence as to what his testimony is. The man hasn't testified.

THE COURT: All right. The technical objection is sustained.

If you assumed that Mr. Dickey said he had never seen a spill, would that be consistent or inconsistent? What would be your understanding of that?

THE WITNESS: (Witness laughs) If Mr. Dickey didn't see a bathtub spilled, then he wouldn't call it a spill. That's my answer. That's the way he was.

BY MR. EARLE:

Q. When is the first time that you recall seeing a common carrier deliver D-D and spill any measurable quantity at Arvin?

MR. MacAYEAL: Objection as to "measurable." It's vague.

THE COURT: All right. Why don't you just consider the question, do you remember the first time you saw a common carrier deliver D-D and you saw some of it get on the ground? We won't specify how much. Some of the D-D?

THE WITNESS: Probably sometime in '68, '69.

BY MR. EARLE:

Q. And at that time you were the plant manager at Arvin?

A. Yes.

Q. How much was D-D going for in 1968, 1969? [988]

A. I don't remember. I do remember selling it for $1.10. $1.15 a gallon.

Q. At $1.10, $1.15 a gallon, if somebody spilled a gallon, that's a $1.10, $1.15 on the ground?

A. Yes.

Q. Did you ever take any action back that when you saw it?

MR. MacAYEAL: Assumes a fact not in evidence.

THE COURT: I think he's being asked to assume that in the question, and you may answer it with that assumption.

In other words, if you were seeing that kind of quantity spilled, were you warning the employees, taking any kind of steps to deal with that?

THE WITNESS: We did. A hundred thousand gallons, you get maybe 4,000 gallons to a truckload. You got 25 loads a year, $25 a year, you don't worry about it too much.

BY MR. EARLE:

Q. You didn't worry about it too much, that's a Brown & Bryant decision, correct?

A. That's a Brown & Bryant decision.

Q. You acknowledge that had you worried about it—had Brown & Bryant worried about it, there are steps that Brown & Bryant could have taken to ensure that nothing spilled; isn't that right?

A. I guess so. I don't know.

Q. Thank you. Do you ever recall receiving an evaporation [989] allowance for D-D from Shell Oil Company?

A. No, I do not recall that.

Q. Do you recall anyone from Shell Oil Company providing Brown & Bryant with advice regarding appropriate couplings or valves to use on equipment delivering D-D?

A. Not specifically, no.

Q. Do you recall Shell Oil Company suggesting the use of dripless couplers?

A. I don't remember that specifically.

Q. Do you ever recall a Shell employee or representative inspecting the wash site sump that we've identified in the center of the Arvin property?

A. No, I do not recall that.

Q. Do you ever recall a Shell representative or employee inspecting the evaporation pond, the southern portion of the property?

MR. LASATER: Objection, vague as to inspection—"inspecting."

THE WITNESS: I don't remember that.

THE COURT: Overruled. You may answer.

THE WITNESS: I don't remember that.

* * *

[999]

* * *

A. Yes.

Q. And there was also discussions about a closed system?

A. Yes.

Q. And there was discussions about valves and packing on tanks?

A. Yes.

Q. All right. Now, how did you—what was your belief as to whether—were they asking you to do this or were they telling you to do this? What was your impression?

A. My impression was that they were telling me

to do it, that they were telling Brown & Bryant that they had to do these things in order to continue to be distributors for D-D.

Q. Now, did these matters that they wanted you to do, did they involve some expense?

A. Yes, they did.

Q. Is that something you were happy to incur at that time?

A. No, not really.

Q. So you didn't—it wasn't necessarily something you were eager to do, all these various improvements; is that correct?

A. No, I was not eager to do them.

Q. But Shell told you to do them; is that right?

A. Shell told us to do them.

Q. Now, had your relationship with Shell changed such that had they told you to do these matters in the past, it would have [1000] been different?

MR. EARLE: I'm going to object. That question is vague, calls for speculation.

THE COURT: Sustained. Rephrase.

BY MR. MacAYEAL:

Q. Now, are you familiar with the relationship you had with Shell, correct?

A. Yes.

Q. As of the time that you were having these discussions in 1979, had it changed—had the relationship changed prior—as it was prior to that time?

A. I don't think so, no.

Q. All right. So based on that relationship, if they had told you to make these improvements in earlier

years, you would have done them at that time as well; is that right?

A. Yes, I think so, sure. I would have had to.

* * *

[1004]

* * *

Q. Now, Mr. Lasater asked you if you had ever witnessed any releases, and I think he asked you if you had seen any recent [1005] releases or new releases, or something of that effect.

Did you ever see any evidence of spills or releases out at the plant?

A. Well, you could take a walk over in that area and see spots on the ground where things had leaked or, you know, spilled.

Q. Were you ever aware of any practices with respect to D-D rigs as far as checking filters?

A. Well, if an order came in that you needed a D-D rig, then somebody would tell the serviceman, "We are going to take a D-D rig out to Joe Smith's farm. Go get it ready." And part of getting that ready was to clean out the filters and everything. When you cleaned out the filters, usually they had material in them and the material would go on the ground.

Q. Did you see that happen?

A. A quart, maybe, or less.

Q. Did you see that happen?

A. Oh, yeah, I have seen that happen. I don't remember specifically on the railroad property, but I have seen it happen.

Q. But in other words, were those rigs parked

over on the railroad side?

A. Yes.

Q. Okay. So when you say you remember it, you remember it generally?

A. Generally, yes. [1006]

Q. But not any specific area?

A. Not any specific place.

Q. Now, do you recall whether or not Shell ever gave you any technical advice about the mobility of the D-D constituents in the groundwater? They ever give you any advice about that or technical advice?

A. I don't remember that, no.

* * *

[1011]

* * *

Q. I want to look at one thing for a moment. Did you have any understanding—let me phrase it another way.

Did you ever see the D-D being unloaded from the tanker truck into the Brown & Bryant bulk storage tank by the driver of the tanker truck?

A. Boy, I don't remember.

Q. Do you know whether that happened?

A. Oh, I'm sure it did.

Q. Was that—is it your understanding that that was a common occurrence?

MR. EARLE: Move to strike. Lack of foundation.

THE COURT: Well, do you have any knowledge?

THE WITNESS: No, sir, I really don't.

THE COURT: Sustained.

BY MR. LASATER:

Q. Mr. Brown, you were the plant manager out there and your office was 20 or 30 yards away from the bulk D-D tank; is that right?

A. Yes, it was on the other side, though. I couldn't see it [1012] from my office.

Q. You would move around the facility?

A. Oh, sure.

Q. You would see the tanker truck delivering D-D?

A. Yeah.

Q. It was coming 25 or more times a year on average; is that right?

A. Yeah.

Q. And you would have the opportunity to see whether it was, in fact, a Brown & Bryant employee that was doing the unloading or whether it was a—the truck driver that was doing the unloading, is that reasonable?

A. Well, not every time.

Q. Not every time, but—

A. I have seen it, yes.

Q. And so you did see the truck drivers unloading these from time to time?

A. Yes.

* * *

IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA
HON. OLIVER W. WANGER

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, et al.,	)	NO. CV-F-92-5068 OWW
Plaintiffs,	)	Court Trial, Day 9
vs.	)	
BROWN & BRYANT, INC., et al.,	)	
Defendants.	)	
AND RELATED CROSS-CLAIMS AND THIRD PARTY ACTIONS	)	

Fresno, California Tuesday, April 13, 1999

REPORTER'S TRANSCRIPT OF PROCEEDINGS

* * *

[1488]

GARY CHIRLIN,

called as a witness on behalf of the Plaintiffs, having been first duly sworn, testified as follows:

THE CLERK: Please state your name and spell your last name for the record.

THE WITNESS: Gary Richard Chirlin, C-H-I-R-L-I-N.

DIRECT EXAMINATION

BY MR. MacAYEAL:

Q. Dr. Chirlin, where are you employed?

A. At Chirlin & Associates, Incorporated, in Rockville, Maryland.

Q. What do you do there?

A. I'm a groundwater hydrologist and everything else, president and chief bottle washer and so on.

Q. And would you please summarize your educational background after high school for us.

A. I attended the Massachusetts Institute of Technology from '68 to February of '72 and obtained a degree, a Bachelor's degree in Earth and Planetary Sciences II.

Q. What was that all about?

A. Earth and Planetary Sciences Department was, at that time, administering the majors which were developed independently, and I developed a water pollution degree at a time when not many people were doing that.

* * *

[1521]

Q. And you've analyzed that as well, have you not?

A. I have. I have also added some hydraulic information, primarily in terms of emphasis of color rather than new colors.

Q. You added the colors?

A. Well, someone related to me did.

Q. And tell us what is the relevance of the subsurface, the nature of the subsurface to your analysis?

A. Well, certainly the first and most important feature of any groundwater system is the medium through which the groundwater flows, and that is a geologic medium. It's hardly ever the case that we have a sand box of uniform materials through which water flows in a straight line without any diversions or preferential paths of flow.

So it's necessary in this case and in many cases to understand what types of impediments to flow may exist in the subsurface, what the dimensions or scales might typically be of those impediments, what diversions of flow might occur as a result. And in this particular case, it has become an issue in terms of the pattern of soil contamination in the vadose zone.

Q. What role does the different permeabilities of the soils have for groundwater flow and contaminant transport?

A. It's really as you would expect. When the materials are coarser, such as sands or sands and gravels, the flow is attracted to those areas because less energy is expended getting from point A to point B if you go through a very [1522] permeable zone. On the other hand, if there is a silt or a clay, a fine material in the way, it will tend not to go through that. Most of the flow will tend to divert around that if there is an avenue for such a diversion.

So we can't characterize at the scale of a, say, a core, five-inch or two-inch diameter core, we can't characterize what the true distribution of sands and silts and clays might be, but we certainly can get a feeling from looking at multiple cores whether the system is irregular or regular. And as you have heard over again, this is an inhomogeneous or heterogeneous setting.

Q. Do the different types of soils have any impact on how contaminants bind to those particular soils?

A. Yes, yes. Some soils have a greater affinity for contaminants than others. So, in particular, I think at this site, I think you would tend to find contamination in the clays to a greater extent than in the sands.

Q. Do they have a greater tendency to absorb the contaminant?

A. Right, it's a sorption process.

Q. Is then based on the differences in the types of soils, what type of pattern do you expect on the groundwater flow?

A. Well, are you speaking of the vadose zone now?

Q. Yes.

A. The unsaturated zone. I would expect the flow from the surface would tend to take a circuitous route moving through [1523] the zones of preferential flow where slightly coarser materials exist.

Q. And these areas of higher groundwater flow, do they have any greater tendency to dissolve any contaminants that may remain in those particular areas from heightened groundwater flow?

A. Well, if there is still some contamination in a sandier material, it will be more available to flow than, say, the same contamination in a clay material, because the amount of water to get by is greater and the absorptive strength is less.

Q. Based on your experience, then, do you typically find a pattern of soil contamination that is, so to speak, straight down a column for volatile organic compounds?

MR. LASATER: Objection. Lack of foundation as to what is typical or that he knows.

MR. MacAYEAL: Let me lay a foundation.

THE COURT: Objection is sustained.

BY MR. MacAYEAL:

Q. Have you ever had any experience dealing with investigations of volatile organic contaminants?

A. Yes.

Q. At other sites?

A. Yes.

Q. And you have studied them?

A. Yes. Most of the sites I have dealt with have been on [1524] volatile organics.

Q. Have you seen any pattern emerge as far as the distribution of contaminants in the subsurface?

MR. LASATER: Same objection. Lack of foundation as to—well, first of all, it's vague as to what he means by "pattern" and then lack of foundation.

THE COURT: I have just understood the doctor to say that he has studied the distribution of volatile organic contaminants at sites under investigation and now he's asked whether he has observed, and I assume it's in those observations that he's referred to, any pattern regarding the distribution of—it's true the word "contaminants" rather than "volatile organic contaminants" was used.

And, therefore, we will ask if you intended to refer to any contaminants or volatile organic?

BY MR. MacAYEAL:

Q. I meant volatiles. Could you limit your answer to volatile, volatile organic compounds?

A. Yes.

Q. Have you seen any particular pattern as far as distribution?

A. Other than the pattern I just referred to where a contamination tends to be found in the finer materials rather than to a greater extent than coarser materials, it's very site specific. If areas where there is a large source, for [1525] instance, you would tend to find a more continuous pattern of contamination which doesn't represent migration straight down from the surface to each one of those vertical sampling points, but quite likely represents contamination that began at different locations on the surface and happened to wend its way down from one location to another to those vertical sampling points in your straight line down. And as sources get smaller and as contamination concentrations get less, the patterns become a lot more irregular, and that happens for a lot of reasons, some having to do with passing above and below the detection limit so what looks like a missing piece of contamination is just contamination at a level below the detection limit of your analytical limit or it could happen because the materials really aren't there.

Q. Now, with respect to the location of particular sampling points, have you had occasion to analyze the location of any Kennedy/Jenks sampling points, particularly at 16-A and CA-16 and CA-19?

A. Yes.

Q. For the record, this image is G-106.15.

What was the issue, as you understood it, with respect to the sampling points?

A. My understanding is the defendants—the defendants' contractor, Kennedy/Jenks, placed some shallow borings, two shallow borings in what they intended to be close proximity to

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IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA
HON. OLIVER W. WANGER

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, et al.,	)	NO. CV-F-92-5068 OWW
Plaintiffs,	)	Court Trial, Day 11
vs.	)	
BROWN & BRYANT, INC., et al.,	)	
Defendants.	)	
AND RELATED CROSS-CLAIMS AND THIRD PARTY ACTIONS	)	

Fresno, California Thursday, April 15, 1999

REPORTER'S TRANSCRIPT OF PROCEEDINGS

* * *

[1831]

* * *

GARY LEARY,

called as a witness on behalf of the Plaintiffs, having been first duly sworn, testified as follows:

THE CLERK: Please state your name and spell your last name.

MR. MacAYEAL: Judge, Mr. Leary had a hip [1832] replacement. He may need to stand up from time to time.

THE COURT: If you need to take a recess, tell us.

THE WITNESS: As long as I stretch it out.

THE CLERK: Please state your name for the record and spell your last name.

THE WITNESS: Gary Joe Leary, L-E-A-R-Y.

THE CLERK: Thank you.

DIRECT EXAMINATION

* * *

[1838]

Q. Did you ever have occasion to see a trucker filling up the D-D tank?

A. I saw a number of trucks at different times unloading in that area. I mean you could always kind of smell the material, so you didn't know if it was coming from that truck or, you know, one someplace else.

Q. Well, do you recall—are you familiar with the smell of D-D?

A. Yes.

Q. Do you recall that from having been out at the Arvin plant?

A. Yes, it was many years ago, but you never forget that smell.

Q. And you had occasion to observe the types of trucks that were making the D-D deliveries?

A. Yes.

Q. Were they the same type of trucks that you were using for your fertilizer?

A. Yes.

Q. Now, could you describe—I want to take you back—do you recall a time period when the so-called "quick connect cam-lock" came into existence?

A. Yes, in the late 70's.

Q. And I'm trying to direct your attention to before that time.

A. Yes. [1839]

Q. Could you describe for us the procedure for filling up a tank during this time before the quick connect?

THE COURT: Which tank?

MR. EARLE:: Objection, the question is vague.

THE COURT: Yes, fill up the tank on his truck or the tank at the site?

MR. MacAYEAL: At the Brown & Bryant facility in Arvin.

MR. EARLE:: I would then object on the grounds of relevance, because there is no foundation shown that the unloading of fertilizer into an above-ground storage tank is the same procedure followed to unload pesticide into an above-ground storage tank.

MR. MacAYEAL: Judge, if I can try and establish that foundation, I will attempt to show how he did it for the fertilizer and to establish that it was the same.

THE COURT: You may.

MR. MacAYEAL: All right.

BY MR. MacAYEAL:

Q. Directing your attention to the process of filling up a tank at the Brown & Bryant facility, and I'm talking about fertilizer, correct?

A. Yes.

Q. Could you please describe how that process

was accomplished. [1840]

A. The trucks had a pump mounted on them, and it was normally operated by a PTO unit, "power take-off." It would be plumbed into the tank or plumbed to where you could hook a hose to the tank, the truck tank which would accept the material. You hooked another hose from the pump to the discharge point, or the tank that you were unloading into. Those, in the early days, were threaded fittings. The tank that you were pumping into normally had a male threaded fitting. The hoses had female threaded fittings and in the end of those threaded fittings was a gasket.

Q. Would you describe what a gasket is?

A. A gasket is a rubber material that fits inside the fitting, the threaded fitting that is supposed to stop leaks.

Q. Okay. And how did it work?

THE COURT: And before you ask that question, to which tank was the hose attached? To the truck tank or to the receiving tank?

THE WITNESS: It was attached to the receiving tank and it came from the pump on the truck.

THE COURT: All right. And so was the hose detachable at both ends or was it permanently affixed to one or the other of these tanks?

THE WITNESS: Attached at both ends.

THE COURT: And who was the, if you will, the owner of the hose? [1841]

THE WITNESS: Normally the trucking company.

THE COURT: Thank you.

You may proceed.

BY MR. MacAYEAL:

Q. Now, so you would attach the hose at the

pump?

A. That's correct.

Q. And then attach it at the tank that you are trying to fill up?

A. Right.

MR. EARLE:: Again, your Honor, an objection on relevance. I think we are talking about a fertilizer.

THE COURT: Well, I can't tell yet and so I'm going to permit his attempt to lay the foundation and I will make a decision.

MR. EARLE:: I would like to voir dire this witness and ask him if he's ever delivered D-D.

THE COURT: As I understand it, the foundation that is being offered by the government is that the witness observed the offloading of D-D at Brown & Bryant Arvin with sufficient power of observation and precision to be able to describe it. That would be a potentially suitable foundation. I can't know that until I hear it.

And so I'm not going to let him speculate, but why don't you wait until we have attempted through Mr. MacAyeal for the foundation to be laid. Then I will let you voir dire. [1842]

MR. MacAYEAL: And just for the—to make sure it's all okay with the Court, I'm going to have him describe how it was done with the fertilizer tank and then if it was the same with D-D.

THE COURT: Yes.

BY MR. MacAYEAL:

Q. Were there gaskets at both ends of the hose?

A. Yes.

Q. And, again, the gasket is—what is it, it was a rubber seal?

A. Yes, it was a rubber seal. Look at a garden hose and the little rubber gasket that goes in the female end of the garden hose that screws up against the faucet to stop the water leak. Same type of arrangement.

Q. All right. So you would connect the hose at both ends?

A. That's correct.

Q. And then turn on—what happened next?

A. Then you would turn on the pump, engage the PTO unit on the truck, and open the valve that controlled the material coming out of the truck tank and allow it to flow to the pump and be pumped off.

Q. Now, did you ever observe any leaks in this process?

A. It was not uncommon to have leaks at the gaskets, and at the packing, in the power or in the pumps themselves, and you would have to tighten this up from time to time to stop it from [1843] leaking, and I want to say probably every load you would have a drip or two that you had to tighten up and then you had to change the packing in these pumps quite often.

Q. Did you carry any gaskets with you in your truck?

A. Yes.

Q. What was the reason for that?

A. Because the gaskets would wear out pretty rapidly.

Q. Did you ever have occasion to use a bucket?

A. Put a bucket under each one of the fittings.

Q. What was the reason?

A. To normally catch the drips.

Q. All right.

A. And when you would finish the unloading process, you would disconnect the hoses and there was always a little residual material left in the hose and you would drain it back into the bucket.

Q. Describe how that happened.

A. Well, normally you would disconnect at the truck head and lay the hose—

If I may?

THE COURT: Yes, you may.

THE WITNESS: If you have a hose and it's kind of flexible and it lays down on the ground, you would hang it on the edge of the bucket and then start back at the far end of the hose and lift it up and allow the material to drain down [1844] and towards the bucket. And it's as you got closer to the bucket, you were here, the bucket sometimes gets unstable and is on rough ground and it would tip over.

BY MR. MacAYEAL:

Q. Would the contents spill?

A. And it would spill, or if you had too much material in the hose for what was in the bucket and you would run it over.

Q. The bucket would overflow?

A. Yes.

Q. Now, was there a tank at Brown & Bryant that had a pump on it, on the tank?

A. Yes, the UN-32 tank had a large pump on it. And you really liked to unload there because it would unload you very much quicker than your own pump and it would suck the lines pretty clean.

Q. In that situation, was there less likelihood of a spill?

A. Yes, because you could break—it didn't have to go through the pump and you could break it loose at the tank, close the valves, break the fitting loose and it would allow a little air to come in it and then you could lift the hose up and work it towards the pump and it would suck it out.

Q. Now, in the occasion when you were using the bucket, though, was there ever a time when you would take the hose and throw it on the ground?

A. Normally, when you finished unloading and if you tried to [1845] get everything you could into the bucket, you would toss it on the ground. All of the tanks had hose tubes on them, the tanker trucks had hose tubes on them, and you would lift up one end of the hose, place it into the hose tube and feed it into the hose tube, which was a carrying tube for the hose.

Q. And would any spills occur in connection with that?

A. A little residue would probably drip out of the hose from time to time.

MR. EARLE:: Your Honor, I would like to make an objection and ask the witness to pause a moment before answering questions. It's obvious that he's got quite a rapport going here with Mr. MacAyeal, but I don't have an opportunity to object, and two questions ago I wanted to raise an objection the question was leading and I now move to strike that testimony because, in fact, it was leading.

THE COURT: All right. If you would, please, Mr. Leary, count a thousand one before you answer after the question is asked. That will give anybody a chance, if they want to object.

THE WITNESS: All right.

THE COURT: I will grant the motion to strike the answer and I believe that referred to what was done when the hose was being reinserted in the hose tube for storage, so that was the answer I have stricken.

BY MR. MacAYEAL: [1846]

Q. Mr. Leary, you testified about the bucket, correct?

A. Yes.

Q. Were there ever any other instances where leaks occurred in the process of filling up a tank?

A. From time to time, like I said before, the pumps leak. The packing on the pumps. The gaskets in the hoses. If you tipped over a bucket, you would spill what material was in it or if you put too much material out of your hose, had too much in the hose and dumped it into the bucket, it would overflow.

Q. What about putting the hose up in the hose tube?

A. When you would toss the hose down on the ground, the hose tube was built on to the side of the tanker truck. You would pick up one end of it and feed it into the hose tube and continue to feed it in until it was completely inside the hose tube. As it hangs down on one end, any material or residue that's left in the hose would drip down and drip out on the ground.

Q. Do you remember seeing that?

A. Yes.

Q. Now, you said you had occasion to see it. Do you remember the distinctive smell of D-D?

A. Yes.

Q. And you had occasion to observe that the D-D—by the way, let me back up. Did you fill up a lot of the tanks in the tank farm area of Brown & Bryant

with fertilizer? [1847]

A. Yes.

Q. And did you have some familiarity with what the tanks, what the various tanks were used for?

A. Yes.

Q. Okay. And you recall the D-D tank?

A. Yes.

Q. And you recall—do you recall the distinctive smell of D-D?

A. Yes.

Q. Now, do you remember ever having observed any tanker trucks filling up the D-D tank?

A. Yes.

Q. Okay. Did they use a procedure similar to the one that you used?

MR. EARLE: Objection. The question is vague and ambiguous with respect to the word "similar."

THE COURT: All right. If you would, tell us your best estimate on how often you observed the filling on site of the D-D tank.

THE WITNESS: Two or three times.

THE COURT: All right. And can you describe what you observed with respect to filling the D-D tank on those occasions?

THE WITNESS: The equipment was similar or exactly like I used on my equipment and the procedure would have been [1848] exactly the same. The—they had a pump on the truck. They pumped from the truck through the pump through a delivery hose into the tank. There were buckets that sat there for drips. When they finished—I mean not seeing it or exactly knowing what they did, I would estimate that there—

THE COURT: Don't estimate if you didn't see it.

THE WITNESS: Okay.

BY MR. MacAYEAL:

Q. You were in the trucking business during this time period?

A. Yes.

Q. You had familiarity with the types of trucks that were used?

A. Yes.

Q. And you were familiar with the type of—you saw these D-D delivery trucks?

A. Right.

Q. You were familiar with them?

A. Yes.

Q. They were basically the same type of equipment you used?

A. That's correct.

Q. And do you recall seeing buckets for those D-D deliveries?

A. Yes.

MR. EARLE: Question is leading.

THE COURT: He's already so testified.

* * *

[1862]

* * *

CROSS-EXAMINATION

BY MR. EARLE:

Q. Mr. Leary, we have met before at your deposition in Bakersfield; do you recall that?

A. Yes.

Q. You began your testimony this afternoon by talking about a—an employment pursuant to which you drove an oil truck and oiled the Brown & Bryant yard, and I think I heard you say—I think I heard you contrast putting that oil down on the yard, which was a penetrating oil, with an asphalt surface, was that correct? Did I hear correct?

A. No. No. It was a mixture of fuel oil and gas oil and they called it "dust binder" and that was all that was put on. There was never any asphalt, to my knowledge, added to the Brown & Bryant facility.

Q. Okay. When you put this oil on the Brown & Bryant yard—

A. Right.

Q. —did it create a surface that in any way resembled asphalt?

A. No.

Q. Did it create a surface that was in any way nonporous **[1863]** because of the oil on it?

A. No.

Q. Did you ever see rainwater on that surface after it had been oiled?

A. Not after it had been oiled.

Q. Okay. But I guess, based on your testimony, you would not have expected rainwater to run off on that surface like it would run off on asphalt?

A. Well, that was the reason it was put on, so it would run off.

Q. Would it run off to the extent that it would run off of asphalt?

A. Probably not as much as it would run off of asphalt, but it would definitely run, and the way the yard was graded, it was graded to run anyway.

* * *

[1872]

* * *

Q. Okay. So you testified earlier that you didn't know that Brown & Bryant had a pump as early as 1976 on the D-D tank, so I suspect that you didn't know back when you were delivering fertilizer to Brown & Bryant whether or not any buckets they had in the area of the tank farm were for the D-D tank or some other tank; isn't that right?

A. That's correct.

Q. As you sit here today, you do not have a specific recollection of observing a D-D delivery to the Brown & Bryant Arvin above-ground storage tank which utilized a bucket, do you?

A. Everything that was hauled to Brown & Bryant between the years of 1974 and probably 1980 that was not—that Brown & Bryant ordered or Brown & Bryant paid the freight on, Mitchell West hauled, so anything—any other trucks that ever came into that facility were being shipped by someone else.

I don't—I mean as far as the buckets are concerned, there may have been a bucket, there may not have [1873] been, but there were buckets all over the facility to stop drips.

Q. But you don't recall that being the method employed by anybody delivering D-D to that facility, do you?

A. That a bucket was used?

Q. Yes.

A. Well, when Rainbow—there were Rainbow trucks and there were other trucks in there. "Matlack"

I believe was another name. Whenever they unloaded, they used buckets just like everyone else.

Q. Mr. Leary, you testified earlier today that the placement of the offloading pump next to the tank facility, the above-ground storage tank facility, facilitated getting the product into the tank without spilling it because it allowed you to get the product out of the hose; do you recall that testimony?

A. That's correct.

Q. Now, if you utilized a—the pump at the above-ground storage tank, would it be necessary to utilize the bucket?

A. Yes.

Q. Okay. And why would it be necessary in that situation to utilize the bucket?

A. Because nine times out of ten, the gaskets are going to leak.

Q. Why are the gaskets going to leak, Mr. Leary? [1874]

A. Because the material they are hauling is a very corrosive material and it eats gaskets up.

Q. On what frequency basis?

A. You know, that's hard to say.

Q. Did you carry extra gaskets?

A. Certainly.

Q. Did you inspect the gaskets before you hooked them up?

A. Not normally.

Q. Why not?

A. Well, you just, if you had used them once before and they weren't leaking, you hooked up and you started the unit. If you leaked, they shut it down

and changed the gasket.

Q. That was your standard operating procedures?

A. That was most of the standards in the industry.

Q. That's not the question I asked you, Mr. Leary. I asked you if it was your standard operating procedure.

A. Yes.

Q. The fertilizers you were hauling were considered toxic, were they not?

A. Your definition of "toxic"?

Q. Were they subject to special regulations in the hauling?

A. No.

Q. They were not?

A. No.

Q. The two occasions that you hauled pesticides, were those [1875] pesticides subject to special regulations?

A. Yes, they were.

Q. And who promulgated those regulations?

A. They were placarded at the loading facilities.

Q. Do you know whose regulations they were?

A. The Department of Transportation.

Q. Do you recall the substance of those regulations?

A. Not verbatim.

Q. Can you tell me in general what they were?

A. No. I mean, not right offhand.

Q. Isn't it true, sir, that some of those regulations dealt with the safe unloading of those products?

A. Well, any product you hauled deals with safe

unloading of it, whether it be a package of toilet paper.

Q. And the fact of the matter is, as an independent carrier, sir, you were supposed to exercise your best ability not to spill product in the unloading process; isn't that right?

A. That's correct.

Q. Now, you testified about this oiled surface at Brown & Bryant.

A. Yes.

Q. Was that oiled surface there as long as you were familiar with the Brown & Bryant facility?

A. Yes.

Q. How about in the area of the tanks? **[1876]**

A. Describe "area of the tanks."

Q. The area—

A. Between the tanks?

Q. Between the tanks.

A. No.

Q. What was between the tanks?

A. Gravel.

Q. And for what period of time?

A. Forever, that I can remember.

Q. Okay. You talked about the UN-32 tank and you talked about what a dream it was to unload into that tank because the pump was right there at the side of the tank.

A. Right.

Q. I take it you still used a bucket when you unloaded at the UN-32 tank?

A. That's right.

Q. When you unhooked your hose after unloading the pump at the side of the above-ground storage tank,

how much product spilled into that bucket?

A. Oh, there would be a couple of drips and then you break the hose loose a little bit and build up a vacuum and it would suck it right into the pump.

Q. So in other words, a couple of drips?

A. Yes.

Q. And "drip," you are talking about less than an ounce? [1877]

A. You know, a half an ounce, an ounce.

Q. Okay. And tell me, sir, was it possible, even without the pump at the above-ground storage tank, utilizing the pump and the power takeoff on your truck, it was possible to walk that hose and not spill product, wasn't it?

A. Possible, but not probable.

Q. Did you ever ask anybody else to help you to hold the bucket?

A. No.

Q. Why not?

A. Because everybody else had their own jobs to do. They were busy. We were hired to haul the material, and that was it.

Q. And one of your jobs was to haul it and not spill it; is that correct?

A. That's correct.

Q. Did you ever think about suggesting that any of the distributors that you delivered to put in a concrete pad with a little lip on it so that anything that spilled wouldn't go to the ground?

A. No.

Q. Brown & Bryant never did that, did they?

A. Not that I'm aware of.

Q. If they did that, they wouldn't have spilled anything in their unloading process, would they?

A. Not that I'm aware of. [1878]

Q. When is the last time you talked to Jack Brown?

A. Probably a year ago.

Q. You didn't see him last week?

A. No.

MR. EARLE:: If I could, I would like to consult with my co-counsel for a moment.

THE COURT: Yes, you may.

(Discussion off the record.)

MR. EARLE:: No further questions, your Honor.

THE COURT: Anything further, Mr. MacAyeal?

MR. MacAYEAL: Yes, your Honor.

REDIRECT EXAMINATION

BY MR. MacAYEAL:

Q. Mr. Leary, when you were delivering the product, were you trying to get the job done quickly?

A. Yes.

Q. Did you have other loads to go pick up?

A. Yes.

Q. So was it a situation where time was money?

A. That's correct.

MR. EARLE:: Objection, leading.

THE COURT: The objection is sustained.

BY MR. MacAYEAL:

Q. When you delivered at Brown & Bryant, did Brown & Bryant tell you how to do it? [1879]

A. They pointed the tank out and said, "There it is, go unload."

Q. And the—were you working for the person—the company that was trying to get the product delivered?

A. Right.

MR. EARLE:: Objection, question is leading.

THE COURT: Sustained by.

BY MR. MacAYEAL:

Q. Who were you working for?

A. I personally was working for Mitchell West Trucking. Mitchell West was contracted—or not contracted, but they were ordered out by whoever was shipping the material.

Q. Now, was it your practice, if you received instructions from that company that was arranging for the delivery, to follow those instructions?

A. No.

Q. Well, did they give you—would you receive instructions?

A. They would tell you that, you know, deliver the material here, and that was basically it. When you arrived at a site, you would ask, you know, "Where is the tank," and they would point out the tank and you would go hook up to it and unload.

Q. That was for the fertilizer?

A. That's correct.

* * *

[1886]

* * *

RECROSS-EXAMINATION

BY MR. EARLE::

Q. Isn't it true, Mr. Leary, that if a trucker

carefully walks the hose after the delivery, whether the pump utilizes at the above-ground storage tank or at the truck tank, the hose is carefully walked and the bucket is watched, you can unload a liquid product into the above-ground storage tank without spilling a drop of it? **[1887]**

A. Probably.

Q. And isn't it true that if the owner of the facility put in a concrete pad in the delivery area with a lip on it that even if a bucket were tipped over, you could prevent any product from reaching a place where it could go to ground?

A. If you had impermeable surface, certainly.

Q. And isn't it true that through the use of dripless couplers you can further reduce the amount of any spill that you are going to have to collect in a bucket?

A. Dripless couplers?

Q. Yes.

A. I'm not familiar with that terminology.

Q. Are you familiar with dry disconnect couplers?

A. Oh, I'm sorry, yes.

Q. And isn't it true through the use of dry disconnect couplers that you can reduce the amount that's going to fall into the bucket to literally drops?

A. I would suspect so, yes.

Q. And again, as a truck—as an independent trucker, it was your duty to utilize whatever methods you could employ to make sure you didn't spill anything; isn't that right?

A. That's correct.

* * *

IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA
HON. OLIVER W. WANGER

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, et al.,	)	NO. CV-F-92-5068 OWW
Plaintiffs,	)	Court Trial, Day 14
vs.	)	
BROWN & BRYANT, INC., et al.,	)	
Defendants.	)	
AND RELATED CROSS-CLAIMS AND THIRD PARTY ACTIONS	)	

Fresno, California Wednesday, April 21, 1999

REPORTER'S TRANSCRIPT OF PROCEEDINGS

* * *

[2169]

* * *

WILLIAM HAVERLAND,

called as a witness on behalf of the Defendant Shell, having been first duly sworn, testified as follows:

THE CLERK: Please state your name and spell your last name for the record.

THE WITNESS: William H. Haverland, H-A-V-E-R-L-A-N-D.

THE COURT: You may proceed. [2170]

DIRECT EXAMINATION

* * *

[2207]

* * *

BY MR. HELDT:

Q. The transportation was done by common carrier; is that right?

A. That's correct.

Q. Once the common carrier arrived at a distributor facility, what were the typical arrangements then for the unloading of the product?

MR. MacAYEAL: I guess here we—at a minimum, we need to have a time frame on it, because he only was the D-D sales manager in 1980. But I guess—

THE COURT: From '80 to '81.

MR. MacAYEAL: '80 to '81.

THE COURT: And he was in the field as well. I don't know whether he was in Indiana and northern Kentucky, I don't know whether that was a bulk sales type of distribution area or [2208] not.

Mr. Lasater has arisen.

MR. HELDT: Your Honor, I think perhaps it's worth mentioning at this point in time that Superfund is a very peculiar animal. It's one in which there's no statute of limitations, and so it's always a struggle for all of the parties to bring specific personal knowledge to an incident which occurred way back in 1976, which makes it almost unique in cases. Mr. MacAyeal—

THE COURT: Well, we have somewhat of a trail, because we know that there's a bulk storage facility, we know that a common carrier is being used, we have some invoices which give us the kind of trail that would be foundationally sufficient to explain what was happening. Here, however, what is done at the distributor's facility, particularly if it's by the distributor, I wouldn't especially expect the national product manager to know. I mean, if he does, he can say so.

THE WITNESS: I know the wording was that we deliver FOB customer's facility, not FOB customer's tank, and there's a difference there.

THE COURT: What is that difference?

THE WITNESS: The difference is we have stewardship of that product across the road to the time it reaches the customer's facility. They take stewardship upon the common carrier arriving at their facility and it's theirs at that [2209] point and then they move it into the tank.

THE COURT: So when you say—you can make your objection and then I'll ask one more question.

MR. MacAYEAL: I just move to strike because he's stating an opinion, a legal conclusion, it sounds like.

THE COURT: Well, actually, I think that he was very cautious in using the word "stewardship." That isn't so much of a legal opinion. He hasn't mentioned title at all.

What he is, I think, expressing is a matter of intent, and the seller can state its intent. Whether or not that's the legal fact is a different question. But, in other words, the seller can say, "We deliver to a common carrier with the instruction and our invoice

provides that this is FOB shipping point or it's FOB destination. And when we say FOB destination, we mean when it leaves the highway and it turns into your driveway, it's your product." Stewardship doesn't necessarily say legal title, but what it does say is, "You handle it now."

Is that—

THE WITNESS: That's correct.

THE COURT: —what Shell intended?

THE WITNESS: Yes.

BY MR. HELDT:

Q. To try to shed some more light on this particular issue, was there a particular custom and practice concerning documents **[2210]** that would be exchanged between the distributor and Shell that would be typical from transaction to transaction in which the distributor would order D-D and the manufacturer, in this instance Shell, would confirm the order and then documents for shipping produced and then invoices?

A. Yeah, there was—

MR. MacAYEAL: Excuse me, Judge. If we can just get him to say, "I've seen these documents before and I have a base to say what's typical" rather than just launching into the conclusion.

THE COURT: All right. Can you state whether or not you had seen the documents that are used in the distribution chain before?

THE WITNESS: Yes, I have.

THE COURT: All right. Then you may answer this question.

THE WITNESS: Yeah, there was a procedure that was to be followed where the customer placed an order

at the order center. The order center would issue an acknowledgment of that order and a release to the San Pedro terminal that there was going to be a shipment of bulk D-D to the customer.

The common carrier would be ordered, would go in, pick up the product. They would weigh in to get the tare weight of the truck, that's the way bulk commodities are moved, they would fill it up, they would weigh on the way back out, [2211] and they deduct the tare weight from the gross weight and that gives the net weight of the product, and that's what is shipped and shown on the bill of lading. And the bill of lading is used for the issuance of the invoice based on the weight of that bill of lading.

MR. HELDT: I'd like to direct your attention to Exhibit 1199. That would be under Tab B, Bill.

I think there are no objections to this being received into evidence.

THE COURT: You probably need to move them in if they're not joint exhibits as you're going, Mr. Heldt.

MR. HELDT: 1199 is in evidence.

BY MR. HELDT:

Q. First of all, page 1 of Exhibit 1199, is this typical of a purchase order that would be utilized in order to order D-D in bulk?

A. Yeah. Every customer would probably have their own version of their purchase order, but that would be typical, yes.

Q. This particular invoice, Plaintiff's Exhibit 1199, has a column called "Quantity" and then it has a notation "1" space "T/L." Do you see that?

A. Yes.

Q. What did that mean in the industry, typically?

A. Truckload.

Q. One truckload. Would that have a standard quantity in the [2212] industry?

A. It would have an approximate quantity. You would typically load the trucks to 5,000 gallons.

Q. Five thousand gallons.

I'd like to direct your attention to the second page as I have it. I'm not positive that in all of the exhibit books this will be the second page, but it has the microfilm number 2902 on the margin.

This has a Shell peckton. First of all, what's a peckton?

A. It's a Shell logo.

Q. What is this particular form?

A. It's an order acknowledgment showing that Brown & Bryant ordered from San Pedro to be shipped to them a truckload of D-D.

Q. What is the purpose of the order acknowledgment?

A. It releases the product from the—it gives—authorizes the terminal to release the product to the carrier.

Q. Does it quote a price?

A. Yes.

Q. This particular invoice is somewhat difficult to read, does it appear to be $2.07 a gallon?

A. Yes.

Q. I note that it says freight is prepaid, what does that typically mean? [2213]

A. That means that Shell paid the common carrier for the freight to take it from San Pedro to Arvin.

* * *

[2228]

Q. On the next page, which is microfilm number 1164, we have that same form, which is the order acknowledgment; is that right?

A. That's correct.

Q. This form appears to be slightly different as far as the line items on the form than Exhibit 1199. What are those differences that we can pick up from the middle of the document?

A. Well, the difference is, for one, the price is different and, number two, is there's a less fall fumigation promotional allowance of 3 cents per gallon.

Q. What does this mean, then, as the total price of the D-D Soil Fumigant considering the price of $2.58 a gallon and then the promotional allowance of 3 cents a gallon?

A. The net price the customer would pay would be $2.58.

Q. Are promotional allowances something that you were generally familiar with in the context of your employment in the agricultural chemical Shell business?

A. Yes. They were typical in not only the D-D product line, but other products within our line. Essentially, what it is is once you establish—once we established our list price, we wanted to maintain the integrity of that list price. If for some reason we had to meet some kind of a competitive offering from another supplier, we typically would do it in the form of a promotional allowance, temporary allowance, something like [2229] that.

Q. And—

A. Much the same as a car dealer that maintains

their sticker price on the window and the manufacturer gives a thousand dollar rebate.

Q. And this would be an example of that kind of promotional allowance?

A. That's correct.

Q. On the third page, which has the microfilm number 1163, this again is the—shows down at the bottom the quantity of freight out; is that right?

A. That's correct.

Q. In this instance, it's more than 5,000 gallons; is that right?

A. Yes.

Q. In fact, it's 5,054 gallons.

A. That's correct.

Q. On the next page, this is a largely unintelligible truck ticket similar to the Gray Truck ticket?

A. Yes.

Q. And the carrier in this instance was Allen Transportation Company, I guess?

A. Yes.

Q. Looking at the last page of this document, this is the invoice front that we had—that is similar to the invoice [2230] front on the Exhibit 1199?

A. Yes.

Q. And it contains, then, an invoice for an amount of 5,054 gallons. Does that indicate to you, then, that the entire amount that left the San Pedro terminal was invoiced to—

A. Yes, it was.

Q. —Brown & Bryant? In other words, they paid for everything that left the terminal?

A. They were invoiced and paid for 5,054 gallons.

Q. They received, however, a cash discount which would lower the price per gallon price?

A. Not a cash discount, a promotional discount. A cash discount is typically when you pay your bill within a specified period of time you can get a cash discount. This is a promotional discount.

Q. That, then, is an example of a promotional allowance. And I'd like to direct your attention next to Exhibit 1271. Again, in 1271—

MR. LASATER: Can you hold on for a second. I have to change notebooks.

BY MR. HELDT:

Q. 1271, first page we have an order for a trailer load again?

A. That's correct.

Q. This was in 1980, it appears.

The second page, the order acknowledgment, it [2231] shows—I can't read the price, but it shows a comp allowance. What is a comp allowance as opposed to a professional allowance?

A. That's abbreviation for "competitive allowance."

Q. And what does that mean?

A. Again, that's something—price, meeting some competitive offer that they received from another supplier.

Q. We have a truck ticket, or a weigh ticket, I suppose, from GATX.

Then we have the ticket which shows the quantities shipped again, that's the document number 1185, and it shows quantity of less than 5,000 gallons that was actually put into the tanker at San Pedro; is that right?

A. That's correct.

Q. The quantity being 4894 gallons?

A. Yeah.

And it may be worth mentioning in these type of bulk shipments, product is not metered in the truck. If it were metered in the truck, you could put in 5,000 gallons, but it's all done by weight. There is no metering of this material.

Q. We have a third common carrier here, it appears L & L Tank Lines; is that right?

A. Yes.

Q. And then we have the invoice. We just established that 4894 got shipped. The quantity that was actually invoiced **[2232]** corresponds to that exactly, 4894.

A. That's correct.

Q. And it shows then a reduction—it's a little clearer now. $2.58 a gallon was reduced to 5 cents a gallon in order to get a total bill of 1,230—excuse me.

A. $12,381.82.

Q. Right.

Now, then, if we can go to Exhibit 1217 to look at a different type of allowance. Exhibit 1217, an order from Brown & Bryant, July 11, 1978. Again, it's for one trailer load; is that right?

A. That's correct.

Q. On this next page, which has microfilm number 3360, it shows a price, I believe, of $2.40 a gallon; is that right?

A. That's what it looks like to me, yes.

Q. And then we have a separate line item, which is called "Less evaporation allowance," and that's stated in kind of mixed terms there. It has a dollar sign and it has a "0.01," but then it has a percent rather than gallon; is that right?

A. Yes.

Q. What was this evaporation allowance?

A. Evaporation allowance is, again, something to just reduce the price from the list while maintaining the integrity of the list price rather than dropping it by two and a half cents a gallon. **[2233]**

Q. Would competitors from time to time offer things such as a evaporation allowance?

A. Yeah, you would—the industry was typical to offer different types of allowances, call them different things, but, essentially, it was to adjust the price, try to get a competitive edge or meet a competitor, one of the two.

Q. Then the next page, again, is a truck ticket again. Skip that page. And the next page, this appears to be Allen Transportation again, and go to microfilm number 3359. That shows us the quantity leaving San Pedro terminal again; is that right?

A. That's correct, 4,954 gallons.

Q. 4,954. And if we go to the next page, which has the microfilm number on it, which is 3361, how many gallons then were invoiced to Brown & Bryant?

A. 4,95—and I think that's a 4.

Q. It appears to me also to be 4,954.

Assuming that is what that says, that corresponds, then, with the 4,954 that left the GATX terminal; is that right?

A. That's correct.

Q. In other words, even with this evaporation allowance on the invoice, Brown & Bryant paid for everything that left the GATX terminal; is that right?

A. That's correct.

* * *

IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA
HON. OLIVER W. WANGER

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, et al.,	)	NO. CV-F-92-5068 OWW
Plaintiffs,	)	Court Trial, Day 18
vs.	)	
BROWN & BRYANT, INC., et al.,	)	
Defendants.	)	
AND RELATED CROSS-CLAIMS AND THIRD PARTY ACTIONS	)	

Fresno, California Wednesday, April 28, 1999

REPORTER'S TRANSCRIPT OF PROCEEDINGS

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[2860]

* * *

JOHN CONNOR,

called as a witness on behalf of the Defendant Shell, having been first duly sworn, testified as follows:

THE CLERK: Please state your name and spell your last name.

THE WITNESS: My name is John Connor. Last name is spelled C-O-N-N-O-R.

THE CLERK: Thank you.

DIRECT EXAMINATION

* * *

IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA
HON. OLIVER W. WANGER

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, et al.,	)	NO. CV-F-92-5068 OWW
Plaintiffs,	)	Court Trial, Day 19
vs.	)	
BROWN & BRYANT, INC., et al.,	)	
Defendants.	)	
AND RELATED CROSS-CLAIMS AND THIRD PARTY ACTIONS	)	

Fresno, California Thursday, April 29, 1999

REPORTER'S TRANSCRIPT OF PROCEEDINGS

[Direct Examination of John Connor continued]

* * *

[2982]

* * *

Q. Is there any source of focused infiltration that you noticed from the topography of the tank area?

A. The testimony and the available record indicate that we do not have pavement at the tanks.

Q. What about some big roof that would be directing all the rain right there onto the spot where the unloading occurs?

A. There is no indication of any such of a source of runoff in that area either, and this is just oiled soil. It's a very imperfect surface by its own right. It's more flaws than not flaws. It's oiled dirt. [2983]

The—at this point, I would like to comment on the .04 inch rainfall.

Q. Okay. Go ahead. What do you think about the validity of using that .04 inch rainfall as the standard for a runoff event and what is more appropriate?

A. The .04 inch rainfall number was derived from the TR-55 method of runoff analysis that is published by the U.S. Soil Conservation Survey. It is, frankly, the most common method for estimating surface runoff, and in Dr. Walton's document, he indicates that he did use this. TR-55 is variably called the SCS method, sometimes called the curve number method.

In Dr. Walton's report, he characterized the surface soil as a paved parking lot with roofs and driveways paved, meaning concrete or asphalt, and he used the highest curve number that's in the SCS method, he used a 98. These numbers only range from areas from numbers around 40 up to a hundred theoretically, and the highest number on the curve is 98. The higher the number, the less initial rainfall required to initiate runoff.

Dr. Walton ran this calculation and came up with a millimeter of rainfall. If you actually look at the type of soil we have in the vicinity of the tanks, which is dirt, you know, on this list, there is dirt, there it is, dirt, including right-of-way, you know, such as somebody driving on it, and I took the dirt number, which is 82,

and I applied—I made it [2984] higher.

I said, well, let's say this is a commercial business, 98, average it, use 87, the answer is .3 inches, .3 inches of rainfall required to cause runoff at the Arvin site, not a millimeter. Think about it. Even—

Q. Well, let's stick with equal units of measure. .3 inches versus .04 inches?

A. Yes.

Q. Go ahead.

A. That's a ratio of, what, eight times, and I also, rather than looking at binomial distributions or theoretical calculations, I pulled all the rainfall data for the Arvin site and pulled, for the last decade of the D-D tank operation, all the rainfall data. This is based on the Bakersfield weather station by the NOA Service. And if we look at that and say in that entire time, ten years, for a decade, how often do you get a rainfall over .3 inches? Well, it gets 70 times in ten years, 70 days where there could be a rainfall event.

Q. To put that in perspective, how many days in a decade, 3,600?

A. In that particular decade there is 3,652 because we have two leap years.

Q. 3,652 days?

A. Yes.

Q. There were 70 days in which you had— [2985]

A. A rainfall event over .3 inches.

Q. That's what percentage?

A. It's under 2 percent. It's very small. This is a desert, remember. So how many times were there rainfall events that even caused runoff at the Arvin site? .2 percent of the time. So if you go out there on day one and you are saying, "Well, gee, I sure need

some rainfall to cause a runoff," chances are one or two days out of a hundred days you will actually see some rainfall movement. That's very different from saying that rainfall gets somewhere, okay?

Q. Okay. One other point I wanted to ask you about. We are not delivering D-D every day. Didn't we—we talked about 25 times a year in a busy year, 15 times in a slow year. Did you do any analysis to spread out the fact that you are only talking about 25 to 15 days a year in which there is the opportunity for it to coincide with a rainfall event? Did you do some analysis?

A. Yes.

Q. What was the results of that analysis?

A. That analysis indicates that on days—well, that there were rainfall events—and these are actual days, right, when there is a rainfall event above .3 inches. I'm looking at the rainfall record for the last decade, that would be 1973 through 1983, the last decade of D-D activity at the property.

You look at that analysis and we superimpose on that [2986] historical profile D-D deliveries. My understanding from the Shell information is that the rate of sales over that period of time would correspond to about 15 deliveries from '73 to '78 and 25 deliveries a year thereafter until 1983. If we superimpose that record, and if we assume just an even distribution of these deliveries over that time, that the number of days that coincide with an actual rainfall event are only one, or it rains from zero to a maximum of five days, if you—depending on how you shift that delivery record.

So—and most of the days it's—the record very typically would come out with one day. One day out of 3,652 up to a maximum of five days, given, I don't know

exactly the days of delivery, would you have rain the same day that you had D-D delivered.

Q. All right. One day in a decade is the probability, then, analysis that we are going through. This may be a statement of the obvious, but it's a legal standard. That would be less likely than not; is that right?

A. Yes. That's a long time to wait for something to happen.

Q. Okay. But now we have had—we don't know, maybe we have had a thimbleful spilled on that day, maybe we have had a gallon spilled on that day. Assuming we have one spill a decade on a day of a runoff event, what are the obstacles then that would mitigate the runoff to prevent it from getting to the sump and the pond which we have talked about being our [2987] bull's-eye that are the cause for contamination?

A. Well, there are a number of abstractions that would impede transport of that spill during a rain event. First, it's the volatilization of the spill. Dr. Deeley talked extensively about the volatile characteristics of the D-D product. We all recall that it is a soil fumigant. It's not called a soil leachant, it's called a soil fumigant because it vaporizes in the soil, so when you spill D-D, it tends to evaporate.

D-D's vapor pressure for 1,2-DCP is about half that of benzene. And benzene is one of the constituents we are most concerned about in gasoline, so let's think about that yourself. You go out in your driveway tonight. Pour out a gallon of gasoline, will it be there the next day? No, it won't.

Q. Will it be there in an hour?

A. There might be some left in an hour, but

normally it's gone. Now, D-D might—it might volatilize a little bit faster—it might volatilize a little bit slower than gasoline because it's made up of a lot of 1,2-DCP and gasoline doesn't have a lot of benzene in it. But think about that, would it be there the next day? No way. Would it be there in a couple of hours, it might be a stain, but, you know, that stuff probably is gone in an hour. And the analyses, if you model this, it's pretty much the answer that you do get.

So the first impedance is the volatilization of the [2988] spill itself. Secondly, is it will, you know, initially contact that soil or that oil, and it's—there it is. It's on the dirt. Now, it rains on that soil. It has to get into that—now the stuff has to get off the soil and into the rainwater. That's partitioning, right? That's partitioning, and that's a very inefficient process.

You ever try to wash something off your driveway, you know it's not—doesn't work so well. Say you had something spilled out there and it rains on it. Still there. You got to work pretty hard. You get some gasoline or D-D on your pants, put them in the washing machine, put it so it cycles one time, man, they are still going to smell pretty bad. The stuff doesn't come off very easily. It's a very inefficient process.

Put D-D in a jar of water, equal parts, just pour it in there. Does it dissolve? No. Make some chocolate milk. Put some Hershey's Syrup in a glass of milk, don't stir it. Does it dissolve? No, your kid would be a little bit upset if that's how you made his chocolate milk, with the good stuff at the bottom. It takes energy to dissolve. It dissolves very slowly, very slowly. So the second impedance is the partitioning process. These are relatively inefficient. So the rainwater will pick up very little.

Then the rainwater has to get all the way down to that pond. From the D-D tanks, if we look at the 1994 topographic surveys, it's something over 300 feet from that [2989] tank down to that pond. If we go as the crow flies, it's something over 200 feet down there. It's 230 feet or something like that. Let's assume that it was graded back in whenever, that it went straight, you know, there was a grade that went to the pond. Well now it has to get there. That spill, some large percentage of it volatilized, mostly. I think if you run the calculations, you will get 90 to 95 percent volatilization in that first day. Then some of it has to get in the rainwater, terribly inefficient process.

And now that rainwater has to get to that pond and it's got a pretty tough trip to make. It's got to exceed the initial abstraction so it causes runoff on each little block as it goes down there. Some of it gets caught in the soil. Some of it gets caught in footprints, some of it gets caught in a truck rut.

Earlier, we looked at the topographic survey, and it's pretty lumpy out there. So all of those things would impede significantly the progress of any droplet of water from my D-D spill plot, if I assume that it did indeed happen, from ever getting down into that pond, and that is a long trip for a drop of water, quite frankly.

Q. And along that trip I presume that it's still raining and so it's diluting that drop, right?

A. Yes.

Q. And along that trip, the ground is still—you have to [2990] cross ground, that would cause it to infiltrate there as opposed to getting to the pond; is that right?

A. You will have some what's called storage under—the SCS method refers to storage. Now,

storage, the actual storage capacity of that soil is five times larger than what's referred to as the initial abstraction.

How much rain does it take to cause runoff to happen? And I have said earlier, if you look at the actual surface soil at that site, it's .3 inches. How much storage capacity in the soil is there? Well, it's five times larger than that. It's 1.5 inches, so that's quite a gauntlet to run to get all the way down there. There is a lot of opportunity for that droplet to get lost, a five times opportunity for that droplet to get lost on the way there.

Q. More likely than not?

A. Oh, infinitely more likely than not that it can't get there.

Q. All right. So let's assume, then, that we have this site, these conditions and site history, but this site is only the bulk storage tanks. It doesn't have the dinoseb spill area, it doesn't have dinoseb slung all over the site, it doesn't have a sump and it doesn't have a pond. Would there be any need whatsoever for any remediation or investigation of this site, in your opinion?

A. No. If we were able to snap our fingers and make the sump [2991] and the pond disappear, we would have a clean site.

Q. Then what can we conclude about the contribution of the bulk facilities to the need for remediation or investigation at this site?

A. The bulk facilities and the activities associated with the bulk facilities, based on all the data in the record, my review of all the analyses conducted by

other professionals on this project, did not make any contribution to remediation costs at this site.

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IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA
HON. OLIVER W. WANGER

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, et al.,	)	NO. CV-F-92-5068 OWW
Plaintiffs,	)	Court Trial, Day 21
vs.	)	
BROWN & BRYANT, INC., et al.,	)	
Defendants.	)	
AND RELATED CROSS-CLAIMS AND THIRD PARTY ACTIONS	)	

Fresno, California Tuesday, May 4, 1999

REPORTER'S TRANSCRIPT OF PROCEEDINGS

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[3442]

* * *

THOMAS W. KALINOWSKI,

called as a witness on behalf of Defendant Railroads, having been first duly sworn, testified as follows:

THE CLERK: Please state your name and spell your last name for the record.

THE WITNESS: Thomas William Kalinowski. K-A-L-I-N-O-W-S-K-I.

* * *

[3443]

* * *

DIRECT EXAMINATION

BY MR. LASATER:

Q. Good morning, Dr. Kalinowski.

A. Good morning.

Q. Would you please summarize for us your formal education.

A. Yes. Thank you. I have a Bachelor's of Chemical Engineering degree from Northwestern University that I received in—

Q. Could you pull the mike towards you a little bit?

A. —in 1972. I then received a Master's degree in Environmental Engineering from Northwestern, a Master's degree in Environmental Health Sciences from Harvard University School of Public Health and a Doctorate in Environmental Health Sciences from the Harvard University School of Public Health. I did post doctoral work in Chemical Engineering at UC Berkeley after that, and then started a career in consulting.

* * *

[3452]

* * *

BY MR. LASATER:

Q. What's been marked as Exhibit 3032, did you

participate in the preparation of this series of graphics?

A. Yes, I did. I basically took the information from my expert report in this matter and tried to reduce it to some key points for discussion.

Q. Okay. Now, the first series of these graphics in 3032 relate to one of your three primary opinions in this case; is that correct?

A. Yes.

Q. And what is the topic of your first opinion?

A. The first opinion relates to the development of an algorithm for calculating a divisible share of the remediation costs for the B & B site based upon the contribution, as it may be identified, for source areas or sources at the site.

Q. Was this developed in response to the request from railroad counsel, myself and others, to develop an algorithm that would allow for a reasonable means of dividing the future costs for [3453] groundwater remediation as proposed by EPA?

A. Yes.

Q. And as part of that charge, were you asked to be able to do this in a way that it could account for releases that originated from the Brown & Bryant property as opposed to releases that originated from the railroad leased property?

A. Yes, that's my intent.

Q. And this first slide, first page, by what it says, I gather that you have concluded that there is such a method available?

A. Yeah, I concluded that costs for remediating impacts to groundwater can be calculated as a divisible share of the total chemical mass present in the groundwater, in this case, the A zone groundwater.

Q. And if you would, provide us with an overview of the basic structure of this approach that you propose as your opinion.

A. I believe the Court has heard testimony over the past few days, Mr. Connor in particular. I was present when he described the extraction system that is currently planned by the U.S. EPA for the A zone aquifer unit and as it's described in the Army Corps of Engineers documents that I have seen, consisting of a multiple well extraction system targeted for the high concentration areas located on the Brown & Bryant property.

My understanding is it's going to begin with three to five wells in the areas of maximum concentration and depending **[3454]** on its ultimate function, may be modified.

But the program was described, I believe, accurately by Mr. Connor as a "mass removal scheme." The intent is to remove mass from the A zone aquifer in an effort to keep that mass from penetrating to the B zone aquifer.

So first of all, I focused on the nature of the remedy in this particular case as relating to mass. There are obviously other ways that remedies could be configured to attain goals that are related to other factors, but in this case, it's pretty clearly a mass-driven removal scheme.

Q. And given that it's a mass removal scheme, how does the use of granular activated carbon for groundwater treatment bear upon that?

A. Well, a couple points were established in the documents, the Army Corps of Engineers documents. The recommended remedy that, first of all, all of the chemicals that were detected in the A zone

groundwater can be treated by a common, conventional technology known as granular activated carbon, or GAC, and that, basically, is an adsorption process whereby the chemicals in the groundwater are transferred on to a sorbing media, in this case, activated carbon, which can then be removed from the site and regenerated or disposed offsite.

The Army Corps of Engineers documents, in particular, describe this testimony, and I'm referring to I believe it was the May of 1995 there were draft specifications that I saw **[3455]** where they called out in great detail the hardware related to extracting water from the A zone and delivering it to the carbon treatment system. So the system itself consists of pumps, pipes, tanks, valves and controls, but the heart of it is to deliver the mass of the pollutants from the groundwater and deposit that mass onto the carbon which will then remove it.

I have a diagram as a slide that I took from a particular Corps of Engineers report that you see on the monitor now. It's Figure 2. It's entitled, "1 to 10 Gallon Per Minute GAC Treatment Train, Brown & Bryant Facility," taken from the Technology Evaluation Report for Brown & Bryant Superfund site, Arvin, California, prepared by the U.S. Army Corps of Engineers, dated June 14th, 1994.

And as you can see, the diagram beginning at the left-hand side shows groundwater, which would be extracted groundwater, entering a holding tank, passing through some cartridge filters to remove sediment and then going through what they describe as aqueous phase granular activated carbon and then to storage and dispose.

A key element, of course, is the delivery of the

groundwater with the mass to the carbon, and for the purposes of my expert report on talking about estimation, allocation of remedial costs, I have to assume that the system will, in fact, do that, that it will be effective in doing that. [3456]

Q. The system you are talking about is the delivery system of extracting the groundwater?

A. Right. What's on this figure before you is the treatment system but that, as I said, the whole system, the wells, the piping, we are getting into the treatment, is what I refer to as the extraction and treatment system. But my analysis has been predicated on the assumption that the delivery system, the extraction system, in fact, works.

Now, I know that there has been some testimony by Mr. Connor that he has his doubts about the effectiveness of it. I know that from reading Dr. Kueper's report that there were some concerns about the safety of that system, and I know from reading Army Corps of Engineers reports that are contemporaneous with this technology report that there was some question about that, but I had assumed that in fact it would work as designed.

Q. Let's first focus on it. It sounds as if you are saying you assume that, but you see that there are doubts or maybe more than doubts with regard to the extraction of the water to deliver it to the start of the treatment system; is that a fair statement?

A. Yes.

Q. Now, the treatment system which is shown on this Figure 2, which is page 2 or 3 of the overhead graphics, your comments that you have just made about efficacy of the system did not go [3457] to this treatment process itself; is that correct?

A. No. That's what I was just trying to make clear, is that the treatment process itself is conventional technology, I have used it on some of the sites I have mentioned earlier.

Q. So GAC, when you run water with these types of pollutants through GAC, they extract these pollutants and it's in the conventional technology that's really not an issue as far as you are concerned; is that right?

A. Right, there is obviously, in any given site, lots of factors to design, but it will work.

Q. Now, let's digress for a moment to the efficacy of the delivery, the extraction and the delivery of the groundwater with the pollutants in it to this treatment system. You mentioned some Army Corps of Engineers comments and questions raised. Could you summarize those for us?

A. The record that I reviewed had in it around the time of this figure, the June 1994 time frame, that the Army Corps of Engineers was brought in to begin the design implementation of the remedy selected in the ROD.

They did several things, one of them was to evaluate the treatment technology and basically make the recommendation to go to a granular activated carbon system. That's the treatment evaluation report from June that I cited.

There was a companion report from June of 1994 that was also transmitted by the Corps of Engineers to Cynthia [3458] Wetmore at U.S. EPA, and it was labeled, "Report on the Hydrogeology and Design of the Proposed Groundwater Extraction System for Brown & Bryant Superfund Site, Recommendations for Extraction and Handling of a Zone Groundwater." I

found at least three different versions of this report in the file, but it began with a June 16th, 1994 draft that was sent to Cynthia Wetmore, and then August 5th, 1994, there was another version of it that I have and then that version got modified slightly and was attached to the May 1995 Corps of Engineers' draft specifications.

THE COURT: Do I understand your work, it has been to evaluate this Corps of Engineers granular activated carbon treatment system from a cost standpoint, you accept it as operative technology that works on other sites, but you did not do an analysis whether it is an appropriate remedy for this site; is that an accurate statement?

THE WITNESS: I didn't do separate tests on the water, but what I'll present to you, your Honor, is my analysis using conventional engineering factors that have been considered and were, in fact, used by the Army Corps of Engineers to evaluate the technology, the conclusion that it should work—that granular activated technology treatment should work quite well in this case.

What I'm speaking to you now is just related to some of the understanding that I have about the delivery of that [3459] contaminated water to the carbon itself.

THE COURT: Yes, that, I understand. I am changing the focus slightly because what I'm interested in knowing is if you did any analysis, you were discussing Mr. Connor's testimony of last week, on the choice of this remedy in terms of—not only of its feasibility, but its necessity as well.

THE WITNESS: By the "remedy," are you including the extraction system as well as the

treatment system?

THE COURT: Yes.

THE WITNESS: As far as my expert report is concerned, I had to assume that the extraction system would deliver the water to the treatment. As far as the treatment is concerned, I did my own calculation, which I have in the information that we are going to discuss, that for my purposes verified that the treatment technology would work and would be effective.

THE COURT: All right. And in terms of the choice of the remedy, did you do any analysis to determine whether, under the requirements of the National Contingency Plan, this is the best remedy?

THE WITNESS: No, I did not.

THE COURT: Thank you.

* * *

[3483]

* * *

Q. So now we go to the next chart.

A. The next chart is a table for the main contaminants of the groundwater in the A zone at the Brown & Bryant site beginning with 1,2-dichloropropane, and the others. I've listed the two Freundlich isotherm parameters that you can obtain from the literature. These constants are empirically determined and published, and I cite an American Water Works Agency publication from February of 1990. And the same values are available in an EPA treatability database that I cite in my report, U.S. EPA 1994 document.

So for each of these contaminants, you can—the

design engineer can look up these values, and using these values, calculations can be made. And, in fact, the Corps' document that I mentioned this morning that referred to treatability calculations went through these very same calculations to estimate carbon efficiency when they made the [3484] recommendation to switch from a UV/Oxidation system to a GAC system.

Q. Then did you use those constants in that table on page 3 in what you put forward here on page 4?

A. Yes. Again, by way of example, using an equal influent concentration, by that I mean assuming that all of the chemicals are arriving at the treatment plant at the same 1 part per million concentration, by way of example, I calculated how much carbon would be utilized in such a treatment stream per thousand gallons of water.

Again, I don't know how effective the extraction system is going to be in delivery, I don't know how much water it's actually going to deliver right now, but we can calculate what the relative efficiency for carbon is for each of the contaminants.

With this equation, what you have up on the monitor now shows is the simple calculation of the mass of granular activated carbon that's required to adsorb any particular compound in terms of pounds of carbon. That's what we want to determine. And it's based on Q, which is the volume of water. And I used the thousand gallons there, a concentration for the dissolved chemical in that groundwater.

And, for illustration, I used 1 part per million or a thousand micrograms per liter. There's a unit conversion factor. And then you use the adsorption coefficient from a [3485] previous table. And, basically,

you do the math and you can calculate pounds of carbon that would be required for each of the contaminants per thousand gallons of water.

I did that calculation as an example, again, assuming that there was an equal concentration of a thousand micrograms per liter in the groundwater for each chemical entering the treatment system, and I calculated a mass carbon per thousand gallons for each chemical, and that's presented in the next table.

Q. Before we go there—well, perhaps it will get explained in the next one. This is on page 5 of Exhibit 3032, and now we're going to Table 2 in that same exhibit. Now, what does Table 2 show us?

A. Table 2 again shows—it has several columns of values, and the first column are the individual chemicals of concern at the A aquifer. I assumed influent of 1,000 micrograms per liter. Obtained the Freundlich isotherm parameters in the second—excuse me, in the third and fourth columns, and then calculated the adsorption coefficient, which is Q, and that's in the fifth column as micrograms per gram. The values that you see there are the relative efficiencies of carbon for each of the contaminants.

The last column is the—using the equation that we just looked at, the estimated carbon usage rate in pounds of granular activated carbon per thousand gallons of water with [3486] this hypothetical mix of water. One thing to notice from this is that for—in the next to the last column, the estimated coefficient is that there's some variability in the carbon's ability to adsorb the compound, but carbon will be effective on all of these compounds.

Your Honor, you asked me earlier what calculations I had done, and these are the calculations that I'm

referring to. Basically, using these published values, you can make estimates that this treatment system will work for these contaminants.

Q. Now, maybe you'll get to it later, but at this point you have an influent concentration, and those are assumed at a thousand parts per billion for each one of these chemicals listed; is that true?

A. Yes.

Q. And are you, in fact, able to—let me phrase it another way.

This is assumed for the purposes of calculating this table, but, in fact, you can use the observed concentrations in the groundwater; is that true?

A. You can make estimates using those concentrations. And, again, in the 1994 documents that I mentioned earlier, the Corps of Engineers did that and had some values that were hypothetical abstraction concentrations.

Typically, this would be determined in the design phase following some work in the RI/FS phase that would include [3487] pumping tests and treatability studies and the like that would serve to estimate those influent concentrations. Ultimately, the design engineer was asked to specify the hardware, if you will, the side of the vessels, the pounds of carbon that would be in those canisters, has to make such calculations in order to pick his treatment facility, to design.

Q. Next we're going to turn to the estimated mass in the groundwater, but I want to be clear where you have gotten us to by Table 2. What has—in general concept, what has been the train of your logic and thought to get us to Table 2?

A. Specifically, I started with the idea of how do

you make any estimate of a reasonable division of the cost of the remediation system? And, again, my review of the remediation system is that all of it is based on removing mass from the A zone. So all of the hardware is designed, or will be designed, to pump water with chemicals in it and deliver it to the treatment system.

In that treatment system, which will be granular activated carbon, all of those chemicals are treatable by that system. They have some relative differences that are—can be estimated in advance as to how they will partition on the carbon, but this allows you to conclude that it is possible to estimate that mass removal and it's possible to remove that mass removal relatively, that is, one compound versus the other, if you have some estimate of the mass of that compound [3488] that was released to groundwater.

Q. So now we turn to the question of the estimated mass in the groundwater. This next slide is page 6 in Exhibit 3032, and what does this show us?

A. Again, I tried to summarize some of the equations that I used in my report, and the effort here is to determine a ratio for any presumed or hypothetical source or source area at the site. If you have some estimate of the total mass in the A zone groundwater and you have some estimate of the release to the groundwater that's being allocated, you can calculate how much of the carbon would be utilized and, thus, the treatment system would be utilized to remove that particular release. But it all begins with an estimation of the total mass in the A zone. And this sheet summarizes the first part of that calculation, which is estimating the dissolved mass.

There have been plume maps drawn by Dr. Stephens, and I use those plume maps to illustrate

the—or to estimate the volume of water containing certain concentrations of contaminants beneath the site. And using this equation, you can calculate the dissolved mass in various portions of the plume and then add it all up to get the total dissolved mass.

This calculation is basically one that was discussed by Mr. Connor, which is basically the volume of the plume, given its dimensions of area and thickness and porosity, and then if you know what the concentration is in that plume, you [3489] can multiply these numbers together with the proper units and get the estimate of mass.

Q. And have you looked at some of the other plumes that have been drawn for the A zone groundwater, other than Dr. Stephens'?

A. Yes, I have.

Q. And in doing so, what have you learned about the robustness of this calculation?

A. As we go through these charts, and as I did in my report, ultimately you wind up calculating individual masses for particular areas of the plume for each contaminant to arrive at the total mass. And I looked at, as discussed here, dissolved mass, and I made some additions for sorb mass, which is the next line which relates to what is sorbed out of the soil.

But when you add it all up and you look at where it is, you find that the vast majority, by that I mean greater than 99 percent of the dissolved and adsorbed mass in the A zone, is estimated to be within a couple hundred feet of the sump and the pond.

The remaining mass, which is illustrated by some of the wide ranging isoconcentration contours that are on these figures that other individuals have drawn actually have very little influence on the total mass.

The total mass resides very near the sump and the pond, and how you draw the shape of the plume doesn't change these calculations very much. **[3490]**

Q. And just to have a quick review, "sorbed mass" means what?

A. Go to the next slide. Basically, the sorb mass is the mass of the chemical actually adhering to the soil particle within the saturated zone.

As you've heard testimony about, basically, the contaminants in the aquifer sorb, or stick, to the carbon that's on the soil particles just as it does on granular activated carbon. It's, in fact, exactly the same principle. It's just when you're working with the treatment system, you have pure carbon, a hundred percent carbon, because you're trying to make it work, and when you're in the aquifer, you have a fraction of a percent of carbon typically, and so there's a little less there. But it's basically the same principle.

When you have these chemicals in solution, there is, by definition, some portion adhering to the surface of the soil. In this calculation that I show here, again, comes directly out of my report, and it utilizes, again, some chemical properties and some soil properties from the RI, such as the Koc, the organic carbon partition coefficient, to make an estimate of the amount of mass that's sorbed to the soil. So I looked at sorbed mass and dissolved mass.

There's also a third component, which is the DNAPL mass that, again, you've heard some testimony about. I've made no independent estimates of what the DNAPL mass is, but I have **[3491]** reviewed Dr. Keuper's report and I know that he has.

But when you consider total mass in the A zone, it will be important to add DNAPL mass to that, but

nonetheless, even if you exclude DNAPL mass, which I did in my report, you can calculate a total mass estimate with or without DNAPL.

Q. Just to make sure the record is—I'm not trying to have you testify to this as an opinion, but just to see whether there's any conflict. Do you have any different view about the existence of a DNAPL or DNAPLs at this site as does Dr. Keuper who will testify later?

A. No, I've read his report and I agree with that.

Q. Then you said you did a calculation, and did you include the DNAPL mass?

A. Yeah. The equation that you just put up on the screen, which is to reiterate what I just said, is the total mass would be the sum of these three components dissolved, sorbed on the soil and DNAPL, which would be free mass, or liquid mass within the pore space of the soil. I did not, in my report, make an estimate of DNAPL mass and used only the dissolved and sorbed, and those calculations are summarized in the next table.

Q. This is on page 10 of 3032. What does this show us?

A. This lists the chemicals of concern in the A zone in the column on the left, the next two columns are the estimates of the dissolved mass and the sorbed mass using the equations that I just showed you, and then they're totaled to come up with the **[3492]** total mass excluding DNAPLs.

Now, again, these are based on the factors from the RI for things like saturated thickness and porosity and percent organic carbon, so they're engineering estimates. But basically they indicate that the predominant contaminant at the site in terms of mass,

not surprisingly, is 1,2-DCP, sort of a runner-up is 1,2,3-TCP, and then there are smaller quantities. These are expressed as kilograms and, in total, there's something on the order of roughly 500 to 600 kilograms of total mass in the dissolved and sorbed phase by my estimates, or that's roughly 1200 pounds or something or other. Again, excluding DNAPLs.

Q. Now, if we turn to page 11 of this exhibit, what are you demonstrating here?

THE COURT: Let me ask. When you say it's something on the order of 1200 pounds, by doing what? In other words, I see that—are you saying that the combination of the dissolved mass and the sorbed mass, because we have total mass excluding DNAPLs, so are you adding the DNAPLs?

THE WITNESS: Let me back up. I'm sorry I confused you.

In the total mass columns, including DNAPL, each of those are listed as kilograms and they're totaled at the bottom of the page. So at the bottom of the page I have a total of 557, you can round it to 600, it's an approximation, that's in [3493] kilograms. I just, in my head, in good American engineering, converted from kilograms and pounds by multiplying it by 2.2 and made that estimate.

THE COURT: Thank you.

BY MR. LASATER:

Q. Then if we turn to page 11, what are you showing us here?

A. What I've gotten to at this point is again we've tried to come up with an algorithm for estimating how you can allocate remedial action costs using the system that's being designed and implemented at the Brown &

Bryant site, the carbon system. We've looked at the fact that mass can be removed by the carbon system and it can be calculated.

We looked at the mass that's in the zone, which is basically your target mass, and I'm saying it's at least 500 to 600 kilograms. And then if you had any independent estimate from anywhere on the site of a particular source or release or area, square footage, whatever you were looking at, that would be expressed as a relative fraction of the total mass.

And what this equation is here is the mass fraction contribution is composed of what I termed Mi, which is the mass of an individual chemical I determined to originate at a separate source or area divided by the total mass.

I did it in this way for this particular site because the—although I showed that the carbon coefficients have slightly different—show slightly different capacities for **[3494]** carbon for the different chemicals, in this case the mass is overwhelming dominated by 1,2-DCP so, essentially, you can for these purposes ignore those slight difference.

But I note here that it would be possible to actually reflect variability in carbon's ability to remove those compounds if you were dealing with, for example, a very large release of chloroform, which is preferentially less adsorbed than 1,2-DCP, you can adjust for that. But here I express it as a mass reduction, mass for release minus total mass in the aquifer zone.

Q. So this mass fraction, the Mi over total mass, there the numerator is Mi and the denominator is total mass; is that right?

A. Yes.

Q. So Mi, if there had been testimony in this case by either Dr. Walton or Dr. Chirlin, or somebody else on behalf of the government, that a specific or estimated quantity or mass of a release had originated on the leased property and made it to groundwater, how would that relate to this Mi over total mass fraction?

A. Any such particular estimate or calculation would be of the Mi value, would be a kilograms of 1,2-DCP from some location on the site, actually reaching the A zone groundwater.

Q. Now I show you this slide on page 12 of this exhibit. What is this saying? **[3495]**

A. I just basically reiterate what you just said, which is that the mass fraction is determined for any particular chemical, can be used to predict the increment, the relative consumption of granular activated carbon for the remedy, that could be used as a rational basis to prorate or divide the remedial action costs for such a system.

Q. Now, you've done some examples. If you would, take us through your Case 1, simple mass fraction without DNAPL.

A. Again, here I'm saying simple mass fraction because I am ignoring any adjustment for relative differences in the efficiency of carbon because it's dominated by the 1,2-DCP. And I showed what I referred to here as the denominator, or total mass, as being the sum of those values that I calculated in the previous table for sorbed mass and dissolved mass, and indicate that it's something on the order of 500, 600 kilograms.

The numerator here, I had to assume a value. I have no—seen no estimates of any other contribution

from any particular place—

Q. Let me ask you a question about that. Did I give you this assumption value?

A. Yes, you asked me to look at 1 kilogram release.

Q. And by using 1 kilogram, what does that allow the Court and counsel to do once you've calculated it for 1 kilogram?

A. Essentially, what we've done here is normalize the mass **[3496]** fraction or allocated fraction to a unit rate or a unit value of 1 kilogram.

Q. So we can take the output from this calculation and either multiply it times however many kilograms are divided by the fraction of kilograms of actual contribution to the groundwater?

A. Right. You can scale it up or down from 1 depending upon how many kilograms you had as an estimate.

Q. Now, before we go further, since this is an assumed value, if it was left to you to come up with the value for the numerator for indicating mass of hazardous substances which had traveled from the surface of the railroad property, leased property to groundwater, what number would you use as the numerator?

A. As I explained in my report, viewing the site as a private party RPM looking at the macroscopic evidence of releases and where things occur, I don't see any contribution on the railroad. I see the 99 plus percent of the mass, more if there's DNAPL, being located near the sump and the pond south and southwest of those locations on the Brown & Bryant property. So, essentially, I would be using zero here

for this fraction based on what I could tell.

Q. So notwithstanding that, if you would, take us through an assumed numerator of 1 kilogram for 1,2-DCP.

A. Well, in this example here I'm showing this Case 1, it's [3497] relatively straightforward. It's just 1 divided by the estimate of the total mass which, in this case, is the result is .0018, or approximately .02 percent.

Q. Before we go further. Let me just understand, the .2 percent, would that be the number that you would propose would then be multiplied against the total cost of the EPA pump and treat remedy?

A. Yes. I'd say it's a reasonable way of allocating what 1 kilogram meant in terms of building and operating that system.

Q. Now, if we look at your calculation for Case 2.

A. Yes. I thought it would be useful for today's purposes to look at how DNAPL might influence this, and I obtained an estimate of the 1,2-DCP DNAPL from Dr. Keuper's report, and I've included it in the denominator in the total mass estimate. You'll see in this equation the last term there is just DNAPL 1,2-DCP, and I've added that to the 557 kilograms that I calculated in the table that I showed earlier.

What I've used is the 1800 gallon estimate from Dr. Keuper's report for the A zone DNAPL volume. That's the volume of pure liquid 1,2-DCP times its density. And converting, again, from kilograms—from pounds to kilograms, you can see that the total mass estimate, once you include DNAPL, dwarfs the sorbed and dissolved mass, it adds 7900 kilograms to the previous 500 to 600 range.

So there would be something on the order of 8400 and [3498] 8500 kilograms estimated by this method incorporating Dr. Keuper's results to determine total mass. This just shows the overwhelming mass impact—again, this adds to the amount of mass that would be centered near the sump and the pond and make my calculations indicate that 99.99 plus percent was near the sump or the pond, just overwhelmingly that's where the mass is and that's where the extraction system is.

If anything, what I'm getting at is that it makes the reasonableness of this calculation even more self-evident to me because that's where they're going to build the extraction system, that's where they're going to pump, that's where they're going to find the mass.

Q. And if you use the DNAPL with the dissolved and sorbed mass in this calculation, what percentage of the cost of the EPA pump and treat system for the A zone groundwater would, according to your opinion, be attributable to that 1 kilogram?

A. Again, it would be 1 divided by 8400, in this example, or .00012 as a mass fraction, or approximately .01 percent per kilogram.

Q. Now I have page 15 up here. What are you using this to demonstrate?

A. I just wanted to illustrate that you could actually do this in terms of pounds of carbon if you wanted to incorporate the coefficients. As I said, if there were a compound or a chemical found to be released that was poorly adsorbed and in [3499] large quantity, it might influence these percentages slightly.

What I found is illustrated on the next two slides, is that making that adjustment to actually calculate pounds of carbon to be consumed, for this case, because

the mass of 1,2-DCP dominates, there is no real impact when you talk about a 1 kilogram release of 1,2-DCP. The fraction, as I show for Case 3 on page 17 for a 1 kilogram 1,2-DCP release is still .2 percent. In this case, it's .2 percent of the carbon, but it's the same result.

Q. Now, is this—this Case 3, is this making allowance for the Q, which is the affinity of these hazardous substances which are in the A zone groundwater and in the saturated zone, that it's the affinity that they have for carbon; is that right?

A. Yes.

Q. And, again, it may be too simple a way, how quickly relative to each other they use up the carbon in the filtration system; is that right?

A. That's right. Basically, we refer to the—sort of in the jargon of burning carbon and basically consumes—each kilogram of these individual contaminants consumes a certain amount of the carbon.

Q. Does that complete your opinion with regard to a method for dividing up the costs of the pump and treat remedy dependent upon where the releases of the mass of hazardous substances [3500] originate?

A. Yes, for this site and my understanding of that remedy, yes, it does.

* * *

[3528]

(Defendant Railroads' Exhibit 3032 was received.)

CROSS-EXAMINATION

BY MR. MacAYEAL:

Q. Dr. Kalinowski, your allocation is based upon a need to determine what quantity of contamination

came from the railroad parcels; am I right on that?

MR. LASATER: Objection, vague. He's done three allocations.

THE COURT: Do you understand the question?

THE WITNESS: Yes, I believe I do.

THE COURT: Overruled.

You may answer.

THE WITNESS: The calculation of a relative contribution from any area would require an estimate of some sort of the—what I refer to as a "numerator," the mass being released.

BY MR. MacAYEAL:

Q. In other words, you've helped us determine what the denominator is, and then you have to figure out what the numerator is to come up with the percentage?

A. Yes. I calculated—presented a means for calculating the denominator and how you would evaluate the numerator if there were some release being considered.

Q. Okay. Now, for purposes of your opinion, though, you concluded that there was zero contribution from the railroad [3529] parcel?

A. As I outlined in my report and said here, based on my macroscopic of what I can see, I don't see any indications of release from there.

Q. You testified earlier that you had done some studies with regard to preferential pathways in the vadose zone. You mentioned one site where you had done some work with that.

A. I don't know if I mentioned studies as much as I have seen sites with preferential pathways in the saturated zone.

Q. And then you also discussed the Corps, there is something in the Corps report about how the water may be following only through a very small area, something to that effect, and Mr. Lasater asked you about rivers and that type of thing?

A. Again, that was the discussion regarding the A zone saturated movement of water in the saturated zone. That's what the Corps report addresses.

Q. All right. Now, as part of your analysis, did you perform any analysis of whether or not there was a surface pathway from the railroad parcel down to the pond, that is, a surface grade?

A. I did no analysis of that.

MR. LASATER: Your Honor, I have an objection and a clarification. This witness has been offered with a predicate opinion of no release from the surface of the leased property to groundwater. Dr. Stephens is going to testify to that.

I just want to be clear here that by government's [3530] counsel going into the areas that he seems to be going in now, I don't want this to be perceived as expanding Dr. Kalinowski's opinion and, therefore, a redundancy objection be applicable against Dr. Stephens' opinion.

THE COURT: All right. Dr. Kalinowski is, then, utilizing and relying on Dr. Stephens' opinion?

MR. LASATER: Well, he is—we can ask him, and the answer is yes, your Honor. He also independently, as he says, from the macro view of a remedial manager, a remediation manager, which is his typical job responsibility, he also has that view, but it was in no attempt to usurp the opinions and the basis that he include a groundwater modeling of Tough2VOC surface transport to groundwater and an extensive

opinion has been developed by Dr. Stephens.

THE COURT: All right.

BY MR. MacAYEAL:

Q. So you picked the number zero, though, from the railroad parcel in terms of the contributions?

A. I was asked if—what number would I pick, and I would pick zero based on what I see in the groundwater plume.

Q. So I'm trying to find out, did you do an analysis of where the various sources were on the various—on the two parcels or are you relying entirely on another expert for that?

A. I'm certainly relying on the other expert's opinion on those various pathways. What I said in my report is based on [3531] my estimates of mass and where the mass is in the plume and the shape of the plume, that there does not appear to be any separate sources or contributions that would be measurable from the railroad leased parcel.

Q. Okay. Well, that's what I was trying to get at by my question. I was going at the issue of I asked you whether you had conducted an analysis of whether or not there was a surface pathway from the railroad parcel down to the pond, and I thought I heard you say no, you had not done that type of analysis?

A. I have not done that type of analysis.

* * *

[3537]

* * *

DANIEL B. STEPHENS,

called as a witness on behalf of the Defendant Railroads, having been first duly sworn, testified as

follows:

* * *

[3538]

* * *

THE CLERK: Please state your name and spell your last name.

THE WITNESS: Daniel Bruce Stephens. S-T-E-P-H-E-N-S.

THE CLERK: Thank you.

THE COURT: You may proceed, Mr. Lasater.

MR. LASATER: Thank you, your Honor.

DIRECT EXAMINATION

BY MR. LASATER:

Q. Dr. Stephens, if you would, let's start with your educational background.

A. I have a Bachelor of Science degree in Geological Science from Pennsylvania State University. I have a Master of Science in Hydrology from Stanford University. A Doctorate in Hydrology from University of Arizona.

Q. And would you relate to us your work history with particular emphasis on work experience that would relate to your opinions in this case?

A. Well, my—I began working in between—after I graduated [3539] from my Bachelor's degree, I worked in the field of nuclear power plant siting, which is a lot of field investigative work that I was involved in.

After I got my Master's degree, again, I continued to do some field work in hydrology on nuclear power plant sites, one of which was in the Wasco area in a

community north of Bakersfield. And I, subsequent to receiving my doctorate degree, I was a professor in Hydrology at New Mexico Institute of Mining and Technology. I was there for about ten years. During the time, I was Chairman of the Geological Sciences Department for about three of those years. And I conducted a great deal of my research in the field of hydrogeology, and vadose zone, transport processes, recharge were some of the areas that I was involved in in publishing.

Q. And since that time, did you form the company that you are currently employed by?

A. Yes. It was developed during the time that I was a professor. Just got too much consulting work and hired one of my students to help me out and we just got busier and busier and it became a point at which I decided to give the consulting business a try, so in about 1989, we left Socorro, New Mexico, moved to Albuquerque and began our company.

Q. And how many—approximately how many employees does your company currently employed?

A. Approximately 110.

* * *

IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA
HON. OLIVER W. WANGER

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, et al.,	)	NO. CV-F-92-5068 OWW
Plaintiffs,	)	Court Trial, Day 22
vs.	)	
BROWN & BRYANT, INC., et al.,	)	
Defendants.	)	
AND RELATED CROSS-CLAIMS AND THIRD PARTY ACTIONS	)	

Fresno, California Wednesday, May 5, 1999

REPORTER'S TRANSCRIPT OF PROCEEDINGS

[Direct Examination of Daniel Stephens continued]

* * *

[3594]

* * *

Q. Let me now show you G-96.1. Now, from the information that is in the file, this is the enlarged version of G-96.1, the smaller version is in G-97—it's from the Ecology and Environment, Inc. photographic record. It has a date, 10-27-91. The time taken, 2125

hours. Frame number 32.

Do you have records indicating the rainfall that preceded that time and date?

A. Yes. There's approximately one-half inch of rain occurred on the day before this photo was taken.

Q. And does that bear on any calculations that you've done that relate to the holding capacity of this puddle in the swale [3595] on the southern end of the railroad leased property?

A. Yes, it does.

Q. Would you please explain those to us.

A. Well, when rain percolate—or when rain falls down onto this oiled asphalted surface, it accumulates in a topographic depression, and you can see the depression here in this photo. And what you can see at the very far end where it says "Cal Cook," or "Cal Cool," on the side of the building, there's a gateway that goes off to the south end of the property.

There's what appears, to me at least, to be dry ground between the very southern and southeastern end of this water depression. And when it rains, the depression here, as we call it, swale, could hold up to approximately an inch and a half of rainfall.

We've calculated this based on the Soil Conservation Service runoff—excuse me, the curve number model, which would be based on the depth of water, the topographic features of the area, and the amount of rainfall and the nature of the surface, being an oiled asphalted material. And from those calculations, we would see that this depression would hold the inch and a half storm.

And from this photo, there was about .51 inches of rainfall the day before, which is consistent with our

calculations, because it does not appear to be any spillage over the edge of this pool. There looks to be some freeboard [3596] available for additional water to fill up the pool before it could spill out of this retention area.

Q. And your calculation of a one and a half inch rainfall, does that make allowance for what basin—I don't know what the terminology is.

MR. MacAYEAL: Objection.

MR. LASATER: Watershed edge area is what I am thinking of.

MR. MacAYEAL: I think counsel misspoke. He said one and a half inches and I believe the witness said .51.

THE COURT: I heard one and a half.

MR. MacAYEAL: I thought the witness said .51, maybe I misheard.

MR. LASATER: There are two numbers being used, one is the rainfall for a particular day and the other is the calculated number. I was asking him about his calculated number, which is one and a half inches.

THE COURT: All right.

MR. LASATER: Let me ask the question again.

BY MR. LASATER:

Q. Your estimate of the holding capacity of this swale area, holding capacity of rainfall, does that include a collection of water from a watershed which is greater in size than the actual pool itself?

A. Yes, sir. It's a little over an acre. It would include [3597] the roof of the building, the edges that could contribute runoff to the site.

Q. And did you look to see how often a storm that would produce one and a half inches of water, how

often that occurred in this area?

A. During the period of 1975 through 1989, it occurred one time, and that was in February of 1978. Normally, in a month, the rainiest months would be of, say, January, February, March. Normally, there's an inch of rain.

So, normally, in most months, the total rainfall would be retained in this swale. It would take a rainfall of greater than 50 percent more than the monthly mean to overtop this pool.

Q. Now, is it your understanding that this swale collected water from essentially the entire leased property plus a little more?

MR. MacAYEAL: Objection as to foundation unless he's assuming facts. Because we've had different time periods where different—there were different practices, like the pipe that Mr. Brown testified about.

THE COURT: The objection is sustained on the nonspecitivity as to time.

BY MR. LASATER:

Q. Well, Dr. Stephens, have you taken into account this purported pipe underneath the railroad that was supposedly [3598] placed underneath the railroad spur?

Actually, let me get the aerial photo. Do you have that aerial photo in your report, the 1975, looking in G-6? If it's not there, then I'd like you to respond to my question in the context of that aerial photo.

You have it at Figure 5. I'd also like to get it in the larger version we have. I don't want to delay this to find it. If we can find it in a moment.

Using the February 1975 photo, or any of the later

photos, would you tell us what allowance you have made for John Brown's report of having—of his people having put a culvert underneath the railroad spur at the southern end of the leased property?

MR. MacAYEAL: Judge, I'm going to have to make an objection here, because this was the photogrammetrist depiction where Dr. Chirlin tried to put in the rest of the information that was taken off the railroad parcel and they objected to that, so we didn't get that into evidence, and now this witness is purporting to interpret this photo. So I object to that because they precluded Dr. Chirlin from doing the same thing.

MR. LASATER: Your Honor, I'd be happy to use a different photo. In fact, we're obtaining that right now.

THE COURT: All right. The objection is sustained.

BY MR. LASATER:

Q. If we look at Exhibit 1023. [3599]

MR. HELDT: What's the exhibit number, I'm sorry?

THE COURT: 1023.

MR. LASATER: 1023, 1024 and 1025.

BY MR. LASATER:

Q. Now, this photo is purported to have been taken in February of 1975, that's Exhibit 1023. Now, if we next look at the photo that was supposed to have been taken in 1981, then you look at the southern end of the leased property. And then we look at 1025, looking at the southern end of the leased property. I ask you what bearing do these aerial photos have upon your calculation of the holding capacity of the swale on the south end of the leased property?

A. Well, we've looked at these air photos, and read the testimony of Mr. Brown, who indicated there was a culvert under the railroad tracks that drained the property. There's no evidence of a culvert that would transfer water based on these photos from the leased property onto the Brown & Bryant property. If there were, you would see some trail, some evidence of channeling, topography, which would be reflective of either vegetation in that focused recharge area or you would see some evidence of drainage, just as you see evidence here of swales and so on.

For example, on Exhibit 1024, you can see a linear feature on the leased property, which looks like the depression that we've been talking about where rain has accumulated, but [3600] there's no evidence of a culvert. In fact, what we've seen and found in the field and what these photographs indicate to me is that, in fact, the railroad tracks were paved over and still are present. They were not taken out in this area before the UN-32 tank and the structures that are shown in these photographs to the north.

MR. MacAYEAL: Judge, I have no objection if this witness is making an assumption to this effect, but he's purporting to testify as to some photograph analysis of what actually happened there. I think we've already established that these types of experts do not have that expertise. Chirlin was precluded from doing that, or there was an objection to that effect.

THE COURT: Well, I must say that my copies of these photos, 1124—I'm sorry, 1024 and 1025, unless you're going to be using microscopic analysis and cartographic analysis, it isn't visible, at least to my eyes.

MR. LASATER: Your Honor, if you look at 1023.

THE COURT: Yes.

MR. LASATER: There is a railroad spur clearly visible that goes along the west side of the maintenance building and the warehouse and starts from just south of the UN-32 tank.

THE COURT: All right. I see two parallel lines that curve in the general area that you have described. [3601]

MR. LASATER: And they're in the exact location, your Honor, of the lease documents, which are in evidence in this case that show the presence—

THE COURT: But I think Mr. MacAyeal's point is, without either knowing that or interpreting it, to our eyes, as we view this, not knowing there was a railroad there, if we look at this map, without expertise, there's no way to identify that as a railroad.

MR. MacAYEAL: I will agree that there is a railroad spur, but Mr. Brown testified there was a pipe underneath it to help move the water down to the pond, and I don't know that he said it was there at all times. Obviously, there's testimony that they took the spur out at some point.

But for this witness, though, to be drawing conclusions from photos when we have evidence in the record—if he wants to make assumptions, fine, but if he's saying that he can tell what happened out there just by the photos, the Court is just as good a witness of that as this expert.

MR. HELDT: The photo that's on the Elmo right now you're calling Exhibit 1023?

MR. LASATER: That's correct.

MR. HELDT: So the record can be clear, because we referred to it several other times in other witness'

testimony, we referred to it as Shell Exhibit 54. I just want the record to be clear that Exhibit 1023 and Exhibit Shell 54 are, in [3602] fact, the same photograph. This will all, I think, eventually tie together.

THE COURT: Well, let me understand, because I think I'm confused. If we agree that there's a railroad spur there and that Mr. Brown did testify that there was some kind of a pipe under it to help convey water, the witness is being asked to do what with those assumed or nonassumed facts?

MR. LASATER: Well, Mr. Brown testified to what he testified to about, some culvert or some conveyance. He did not testify as to what level that was put in so that—what size the puddle would have to be on the leased property before it would begin to go through that culvert. So that's point number one.

Point number two is that this witness, as part of his work at sites like this during his professional career, has looked at photos for some purposes, not for all purposes, not to the same level of an expertise of the names that your Honor designated such people looked at such things.

The sole purpose of my eliciting what I've already elicited from him is just to say he doesn't find evidence of it when he looks at this for the reasons that he's indicated. Mr. Brown's testimony is what Mr. Brown's testimony is. Here is an expert who has the expertise that he has saying—

THE COURT: Let me ask the witness. Because I will tell you this, that, again, going back to the last case, we had [3603] photogrammeters, we had people who basically what they do is they interpret aerial photographs visually and with other aids, and so that's

all they do.

Now, is that what you purported to do here? Were you looking for a culvert or some conveyance mechanism in this area?

THE WITNESS: Yes.

THE COURT: You were?

THE WITNESS: Your Honor, I've had courses in photogeology at Stanford where we do this type of thing. I have some of the training—

THE COURT: You do have that?

THE WITNESS: I've looked at depressions to see what differences there are in elevation. But that's not my practice, that's not what I do, and I'm not a photogrammetrist, but I do interpret air photos. I have appeared in court as using these photos in exactly the same manner as I'm doing here to interpret hydrologic phenomena.

THE COURT: And that would give you the ability, your experience and training, to detect a culvert from this kind of a photo?

THE WITNESS: Maybe not—you can't perhaps see the culvert from this level of photography, but you can see the drainage that should be channeled downstream from the culvert. We don't see any evidence of that. Furthermore, I was in the **[3604]** field. I looked twice for this culvert, and, in fact, I asked the remedial engineers who took the tracks out only a few weeks ago if they found a culvert. They didn't find a culvert.

MR. MacAYEAL: Judge, that's hearsay, and the site in 1997 we know is different from the way it was back at the time of operation. Furthermore, in the witness' own aerial photo he shows a drainage line, so I

just object again.

If he's making an assumption, I have no problem, but if he's trying to testify to historical facts, I don't think there's any foundation. We should get a witness who was there.

THE COURT: All right. Well, you just made the statement that the witness had found evidence of a drainage and I just heard him say that he hasn't found the evidence of such drainage.

MR. MacAYEAL: I'll cross him on that, but he has another picture where he has an arrow.

THE COURT: Well, you can have a direction of surface flow based on the gradient on the property, which I don't know what the arrow is supposed to depict, it's an entirely different subject from whether there's a culvert there, or some other drainage conveyance mechanism that would be a channel or, I don't know what else it would be, whatever.

MR. MacAYEAL: I think Jack Brown did testify that they did grade it to show it would pump down to the pond.

THE COURT: I agree, he did. This property was [3605] graded to drain to the southeast. That, at least according to Mr. Brown, that's what he said.

MR. MacAYEAL: So if he wants to assume that's not true, fine, but I just—

THE COURT: No, he's not assuming that that's not true. He is focused—Dr. Stephens is focused on whether there is a specific conveyance mechanism, either a culvert or a channel or something else at this point, where the spur ends to go to the pond from the leased property.

MR. MacAYEAL: Well, we know from the photo

that the spur was taken out at some point, so I don't know—I don't think there's any evidence as to whether that pipe was removed as well, but—

MR. LASATER: Your Honor, I think counsel now is interpreting photographs. We have someone who has been to the site and who can testify and say that the spur was still in place within the last year.

MR. MacAYEAL: Based on what someone told him.

THE COURT: No, he said he saw the spur.

MR. MacAYEAL: Okay, all right, the spur, but not the culvert. That's fine. If he can swear to it, that's fine.

THE COURT: Yes. All right, you may proceed.

BY MR. LASATER:

Q. Dr. Stephens, have you told us—have you completed your response with regard to information indicating whether or not **[3606]** there was some kind of culvert underneath this railroad spur that ended up going north and south along the west edge of the warehouse?

A. Well, I think the—the photo that we were looking at—

MR. MacAYEAL: Objection, your Honor, I thought that the testimony was going to be what he actually saw. I thought they just said he saw the culvert, he could testify to it, now he's going back to the photo.

THE COURT: Let the witness answer, and then if you have any difficulty with the answer, you can make a motion to strike.

You may answer, Dr. Stephens.

THE WITNESS: I believe the question was

whether there was any other information regarding the presence or absence of a culvert?

BY MR. LASATER:

Q. Right. And I'm not suggesting that there was. We had such a long colloquy of counsel, I wanted to make sure that we had completed that, and then I was going to ask you about what you observed when you actually were at the site.

A. So I'm not sure what the question is.

Q. The question is, did you complete your answer with regard to information available to you indicating whether or not there was a culvert?

A. There's one thing I would add that gets back to the exhibit [3607] we were looking at with respect to drilling SB-423, which showed the flooded swale.

Q. That's Exhibit 96.1.

A. That's correct. This picture was taken a day after the rain. Had there been a culvert there, it would have drained at the site. I don't believe this volume of water is difficult for a culvert, which I would think is only a foot in diameter, would have any difficulty draining.

The other aspect that you asked about, any other evidence, is just my engineering judgment, if you will, or perspective on drainage of sites. I can't imagine why one would have a culvert to take water from the south end of this property and put it into an area which is already troubled by flooding in the south part of the Brown & Bryant property. It makes no sense to me to flush water from one area onto another, and it's even more trafficked and used than this portion of the site.

MR. MacAYEAL: Judge, I move to strike if he's—we've heard testimony from Mr. Brown as to why they

did, and this witness is saying, "I can't figure out why anybody would do it." That's not relevant. We've heard testimony about why it was done.

THE COURT: I'm going to grant the motion to strike because, apparently—and my recollection is that the pond has been there at least from the 60's in various configurations and [3608] various linings that were in it, and I don't remember more than one occasion being testified to when the pond ever overflowed in terms of there being a flooding problem at the south of the property.

MR. LASATER: Your Honor, we have aerial photos and we have testimony indicating that water backed up in the area to the west and north immediately around the pond once it began to be bermed, and that at least began in 19—late 1979 or 1980. And if you'll remember, the lease of the leased property doesn't go in until right at the end of the year of 1975, so it's only in place for '76, '77, '78, '79 before these changes take place in the pond.

THE COURT: All right. Then what I will ask Dr. Stephens is this. Did you consider that kind of evidence in reaching your conclusion?

THE WITNESS: Yes. It's in my expert report, as well. That comes out of testimony by Merryman, I believe.

THE COURT: All right. Well, I didn't read, because nobody asked me to, your expert report, and I'm only receiving what I hear from you now.

And so I'll change my ruling on the objection and overrule the objection since Dr. Stephens did make actual observations from site data and historical descriptions of the site to support his opinion, and it will be subject to cross-examination. [3609]

BY MR. LASATER:

Q. Now, let me ask you to assume the accuracy of the report that there was a culvert. Even if that is the case, is there anything about the level of the culvert compared to the level of the swale that was provided in that testimony or anywhere else that would indicate to you that your calculations of the area and the swale is not accurate?

A. No.

Q. Now let's turn to your actual observations of going to the site. When was the first time that you went to the site, approximately?

A. I believe it was June of '98.

Q. And did you look for this spur track that splits off from the main track just south of the UN-32 tank and curves until it's going almost due north along the west side of the warehouse?

A. Yes, sir.

Q. And what did you find?

A. I found that it extended just about up to the edge of the overhang, or the awning. It appeared to me that the area which was removed is consistent with the area photos where they removed the tracks in order to put the awning in, and that the remainder of the section of track south of the overhang was still in place, but covered up and overtopped with the asphalted-like material which formed much of the paved area on [3610] the leased property.

THE COURT: Well, were the tracks visible through the asphalt?

THE WITNESS: Yes, you could see the top of the track in places. In other places it looked like the asphalt was still covering it, but it was pretty clear.

BY MR. LASATER:

Q. Did you attempt to take any photos that showed this that you have provided in your expert report?

A. I'm not sure in the expert report there's a photo of a track. I could be mistaken.

Q. I think I'm thinking of a photo that didn't make it into the expert report, so I'll move on to another topic.

In this observation that you made actually in the field, was the railroad spur raised above the ground level on either side of it?

A. Yes, it was.

Q. And can you approximate approximately how much it was raised?

A. Well, I think, by looking at the rails where they were not capped or topped over with asphalt, the rail would have been 4 to 6 inches above the tie, which held the rail.

Q. And was there—did you make an estimate of the top of the overcovering, over this—what was left of the rail spur above—surrounding—immediately surrounding land? In other [3611] words, when you include the ballast and the tie and the rail and the paving over the top of the rail?

A. Well, it's well over 1 foot in depth, and it's—at least that based on information in the field notes of Ralph Lambert that accompany this photo who measured the depth of water at greater than a foot, and at that point in time it's evident that the pool did not overtop the rail spur in my examination of this photo.

Q. So was your visual examination of what was left of the rail spur consistent with it being at least a

foot higher than the surrounding grade?

A. Yes, sir.

Q. Now, you mentioned Ralph Lambert's reference. Is that from the report of these site activities that were done by E & E?

A. Yes, sir.

Q. And there was a measurement taken at the deepest part of the puddle in the swale that is shown in G-96.1?

A. Yes, sir.

Q. And that was 1 foot deep?

A. Yes.

MR. MacAYEAL: Judge, I move to strike on foundation, unless the report actually says that, they measured it and it was a foot, because this witness was certainly not there with Mr. Lambert doing that.

THE COURT: Well, I at this point, unless the [3612] railroad wants the underlying data in evidence, I'll permit Dr. Stephens to testify that he accepted that measurement and is relying on it in his analysis just as that, for the fact that he relies on that hearsay. But if somebody wants the underlying data in for the truth, then you will have to have a foundation for it.

MR. MacAYEAL: It is in evidence, but I just wasn't clear whether he was making an assumption or if the report says, "I, Ralph Lambert, went out and measured it and it's a foot." If that's the case, then—

BY MR. LASATER:

Q. I'm now handing the witness Exhibit G-96, which is entitled, "Final Report Task 6, Soil Sampling, Brown & Bryant, Arvin, California, Prepared for U.S. Environmental Protection Agency, dated April 22, 1992."

Now, have you found the reference in this exhibit?

A. Yes, I have.

Q. Would you tell us what page it's on?

A. It's on page 26 of the handwritten notes, and also on page 27.

Q. And would you direct us to a page number? Is that page 26 in the upper left-hand corner and 27 in the upper right-hand corner?

A. Yes, sir.

MR. LASATER: Let's wait until Court and counsel can **[3613]** find that. G-96, handwritten notes, page 26 and page 27.

THE COURT: Mine are numbered on every other page, the handwritten notes.

MR. LASATER: I think they alternate the location of the numbers, your Honor, page 26 and page 27.

THE COURT: Yes.

MR. LASATER: Upper left and upper right.

THE COURT: Yes. All right.

BY MR. LASATER:

Q. Now, Dr. Stephens, if you would direct us to what page you're on in this exhibit and read to us what you find there that indicates the depth of this puddle shown in this photo G-96.1.

A. Okay. On page 26, where it says,

> "1635 hours, start pumping from largest rainwater pond, which is near the lined pond, into the large water tank, pond was up to 1 foot deep. The other large pond is on railroad property near the south end and is up to 1 foot deep."

Then on the next page, 27,

"At 1635 hours," near the bottom, it says, "Grout to surface, finished pumping from pond near lined pond into large water tank. Water level in tank is greater than a foot. Start pumping from rainwater pond on railroad property (greater than 1 foot deep **[3614]** max) while drillers steam clean."

THE COURT: Let's take the morning recess. We'll stand in recess until ten minutes of 11:00.

(Recess)

* * *

[3681]

* * *

Q. Now, you also modeled a spill of 1,2-DCP at the surface; is that correct?

A. Yes, we did.

Q. Would you tell the Court what assumptions you made about that model?

A. We considered two cases where we were trying to determine how big a spill one would have to have on the leased property in order to impact the A zone to such an extent that it would require remediation, and that was a point at which it would have—the A zone would have a concentration of 50 micrograms per liter or greater.

And we essentially had four steps in this process that are linked together for both cases. One case was on an asphalt surface, and the other case was on a bare soil surface.

The first step involved taking some water, actually, in varying amounts, from a half a—I believe a cup to a couple gallons to five gallons, and spilling them on our parking lot, an asphalted surface, and spilling them on

silty sand in the vicinity of our office and looking at what area that spill occupied. Sort of getting some idea of how much area a five-gallon spill or so would consume. So we had a [3682] relationship between volume of a spill and the area it would occupy.

We scaled that up to what volume—what area a 500-gallon spill, for example, would occupy on an asphalt surface or on a bare soil surface. And what that really does is it tells you the thickness of a spill, and that's important because we then go to the next step with this finite thickness of spill occupying a finite diameter.

The next step is to calculate the competing effects of evaporation and infiltration. We take both into account. We use what's called the EPA model for calculating evaporation, and it includes wind speed, it includes the vapor pressure and temperature that are present.

We assume that the temperature was a warm day, I believe it was 77 degrees Fahrenheit, and we assumed it happened in June. So we used the mean monthly wind speed for June, and we calculated how much of that spill would evaporate and how much would infiltrate.

We calculated infiltration using an analytical solution by Reible and others, which is referenced in my expert report, that is specifically designed for a DNAPL phase. And, in essence, what we calculate is of that 500-gallon spill, 54 percent of it infiltrates and the other 40—excuse me, 56 percent infiltration and 44 percent evaporates for the bare soil case. [3683]

So with that mass in the soil, we then apply the code T2VOC, which allows one to consider all the DNAPL phase, the water phase, the gas phase, and

move that into the soil assuming it has the density and viscosity characteristic of pure 1,2-dichloropropane.

We allow recharge for that case of 1 percent of mean annual precipitation, which comes out to be about a millimeter and a half per year of areal distributed recharge.

Q. That's three times greater than the highest calculation you actually calculated from the actual data from the site; is that correct?

A. Approximately, yes.

Q. So you used a higher infiltration rate than what is actually observed at the site?

A. Yes.

Q. Okay, you can go on.

A. So we take the mass input from the infiltration and evaporation phase, put it into the T2VOC, and it predicts how far and how fast mass would move through the solid and exit to the water table. At that point we've been able to establish the mass flux, that is, how many grams per second have come into an area over the A zone.

So we take that mass exiting the vadose zone and put it in the aquifer, and calculate the concentration. And for this particular case, we got about 50 micrograms per liter was [3684] the impact, and that told us that was our threshold. We then stopped and concluded that if a 500-gallon spill did, in fact, occur, it would impact the A zone to an extent that would require remediation.

Q. And to require remediation, what assumptions were you making? The 50-micrograms per liter, why did you determine that was—why did you assume that was a level that would require remediation, just so that

we'll know?

A. I understood that to be in the ROD.

Q. Now, if there was a spill of 1,2-DCP, it would be as a component of D-D, most probably, or Telone, and assuming it was about 25 percent—did you actually do the separate calculation for D-D as opposed to pure 1,2-DCP?

A. No.

Q. Nonetheless, not having done that calculation, are you able to say something in general about which side of the magnitude of the spill you would do if you did do it for D-D?

A. I thought about that, and I think we're conservative in that if I had used a lower vapor pressure, in other words, taking the vapor pressure of the D-D, dividing it by 4, based on the mole fraction, assuming I still had now 500 gallons of D-D instead of 500 gallons of 1,2-dichloropropane, we would get more of an impact to groundwater with the use of the pure phase than if we had used the partitioned mixture.

Q. So it would take—in your opinion, it would take a larger [3685] than 500-gallon spill of D-D on bare ground at this site to get to the A zone groundwater at a level of 50 micrograms per liter, which is 50 parts per billion; is that right?

A. Yes.

Q. Now, you also did this for a spill on asphalt or an asphalt-like surface. Would you tell us how that spill analysis differed from the one you've just given us on bare soil.

A. It's essentially the same, except the physical properties of the asphalt are much different. The soil of the asphalt has low permeability, it has other

capillary characteristics that are inputted into the T2VOC. It's not extra layer in the model above the soil, the bare soil that we used in the first case. Only a fraction of a percent gets into the media.

One of the differences here is once we do get some mass into—below the asphalt, we have no recharge. The recharge is stopped. It's assumed to be impermeable, so, in essence, we cap all the infiltration and all the gas as well in the subsurface and allow it to move downward.

Q. Is that a realistic assumption?

A. I think some of the gasses will escape. It's relevant—when we talked about the neutron probe data at BB-1, for example, underneath the asphalt, how much drying can occur, and I talked about barometric pumping effects and the thermal heating effect that could drive the volatiles out, so I think [3686] we were fairly conservative.

Q. And even being conservative, what size of 1,2-DCP spill would you have to have to impact the ground water at 50 micrograms per liter?

A. I think it's well over 10,000 gallons.

* * *

IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA
HON. OLIVER W. WANGER

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, et al.,	)	NO. CV-F-92-5068 OWW
Plaintiffs,	)	Court Trial, Day 23
vs.	)	
BROWN & BRYANT, INC., et al.,	)	
Defendants.	)	
AND RELATED CROSS-CLAIMS AND THIRD PARTY ACTIONS	)	

Fresno, California Thursday, May 6, 1999

REPORTER'S TRANSCRIPT OF PROCEEDINGS

* * *

[3725]

* * *

THE COURT: We're going back on the record in United States versus Atchison, Topeka. And we are cross-examining Dr. Stephens.

Mr. MacAyeal.

MR. MacAYEAL: Good morning, your Honor.

(Pause in the proceedings.)

MR. MacAYEAL: Judge, I left my copy of the moisture calculations he did over at the hotel. Dr. Walton is going to retrieve that, but let me ask about that anyway.

CROSS-EXAMINATION

* * *

[3784]

You'll recall the flood irrigation over here is one of the main drivers of pushing water here. Secondarily superimposed on here is a sump, which has a local mound on top of that westerly flow, and there's no reason why one would not logically extend a plume in this direction based on this data and those hydrologic pieces of information.

THE COURT: And is there any way that you know of in the science, in your background and experience, to say what contribution to the plume there has been from the various areas of the property, and the main distinction being the Brown & Bryant versus the railroad property?

THE WITNESS: I have not dealt with the issue of allocation per se, but my approach has been that all the groundwater contamination that's here is explained by releases on the Brown & Bryant property. You need no—there's no evidence for soil contamination sufficient to have impacted groundwater for a variety of reasons.

One, the concentration; two, the lack of continuity of any of the 12 deep borings on the leased property, none of which have concentrations continuously to the water table when sampled at intervals of 5 to 10 feet. The only place you find that is in the 13 borings that have

been drilled through the Brown & Bryant property, nine of which have contamination continuously for some of the chemicals of concern all the way to the water table. [3785]

My view in this whole case, as I believe I articulated when I began to testify, was my opinion was that groundwater contamination is caused by releases on the Brown & Bryant property. There's no evidence that releases on the railroad property caused groundwater to be impacted to an extent which has caused a trigger of remediation, and that's the context—that's the essence of my expert report as well.

THE COURT: All right. Thank you.

Let's take the morning recess. We'll stand in recess until ten minutes of 11:00.

(Recess)

IN THE UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA
HON. OLIVER W. WANGER

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, et al.,	)	NO. CV-F-92-5068 OWW
Plaintiffs,	)	Court Trial, Day 24
vs.	)	
BROWN & BRYANT, INC., et al.,	)	
Defendants.	)	
AND RELATED CROSS-CLAIMS AND THIRD PARTY ACTIONS	)	

Fresno, California Friday, May 7, 1999

REPORTER'S TRANSCRIPT OF PROCEEDINGS

* * *

[3927]

* * *

We'll resume the testimony of Dr. Stephens.

CROSS-EXAMINATION (Resumed)

* * *

[3930]

* * *

BY MR. HELDT:

Q. Viewing, then, the evidence in its totality, that being that document, which was the totality of the EPA's air photo analysis which had multiple photos, multiple interpretations, some of which you agreed with, some of which you didn't, distilled to its essence, your opinion is, is it not, that this document upon which you founded some of your opinions contains the opinion that the pond had a berm, and you would tend to agree that looking at the totality of the evidence, it would appear that the pond has a berm; is that right?

A. Yes, sir.

Q. A berm which would tend to impede the flow of runoff into [3931] the pond except in very exceptional events in which you have massive flooding?

A. Yes, sir.

Q. A question has then been raised in prior examination of witnesses about the fact that there is, however, contamination in this pond, and the question has been raised, "Well, how did it get there?" Do you have some opinions about how contamination got into this pond?

A. From the information that we've reviewed, it appears as though there was a connection from the sump to the pond through a pipe.

Q. At some point in time there was a connection between the sump and the pond which would deliver contaminants directly into the pond; is that right?

A. Yes, sir.

MR. MacAYEAL: Judge, I move to strike that,

because there's absolutely no evidence in the record, and the only evidence we had was that there was no such connection. Mr. Merryman testified that he put it in in 1981, which the pond was lined, but prior to that there was no connection. There's no evidence of that.

MR. LASATER: This is proper examination.

MR. HELDT: Mr. MacAyeal just said two different things—

THE COURT: The objection is overruled. [3932]

BY MR. HELDT:

Q. Would one mechanism prior to 1981 for contamination to get into the pond, could it be possible that it could be direct dumping into the pond, for whatever reason, that Brown & Bryant might have in its operations to dump directly into the pond as opposed to dumping into the sump?

MR. MacAYEAL: Objection, calls for speculation.

THE COURT: I think that—is it possible, anything it possible. We will ask you to rephrase the question to ask him if, in his study of this site, he has found any evidence that there was intentional transfer of contaminants to the pond.

Can you answer that question?

THE WITNESS: Yes, your Honor. The information that I have is that—my understanding is that the sump and the pond were connected during their operation somehow in the subsurface through a pipe, certainly after 1981, and my understanding was that it was earlier, as well. But if that's—in that case, I have no information that would suggest there's dumping in the pond.

On the other hand, if the facts are different, such that there was only a pipe connecting the sump and the

pond from 1981 onward, then I would think it's possible and more likely than not contaminants were released into the pond by another mechanism in order to get it to spread as far as it did [3933] in the groundwater.

THE COURT: Thank you.

BY MR. HELDT:

Q. On Exhibit 1069-A, which is not admitted into evidence, but is merely demonstrative at this point, this is the overlay that EPA placed on top of that 1975 aerial photo, and it has an indication right here at the pond of HT. "HT," is that a common acronym for "horizontal tank"?

A. That was a question?

Q. Yes.

A. It's my understanding it was a sand trap or horizontal tank that would have slowed the velocity of water to allow sand or silt to settle out.

Q. We have this HT pointing to this area of the pond; is that right?

A. Yes, sir.

Q. We lift it up and look at the aerial photo, does that correspond, then, with this cylindrical object which appears to be over what you were describing as the sand trap that's on the edge of that pond?

A. It's in that area, but from this quality, I can't see whether this is a raised, above-ground horizontal tank or this is actually—maybe if I had the original I can see it better.

MR. HELDT: We have another exhibit, that's 1069-A. Richard, zoom that in. [3934]

BY MR. HELDT:

Q. As we've now zoomed in closer, would it appear that that "HT" might be consistent with your

own analysis that that would be a horizontal tank.

A. It looks to be an above-ground horizontal tank.

Q. Perched over the lip of this pond in 1975?

A. One of them appears to be, yeah, in that position, yes, sir.

* * *

JA-343

[Trial Exhibit G-4]

Expert Report by

Thomas W. Kalinowski, Sc. D.

Re: AT&SF, et al. V. Brown & Bryant, et al.
No. CV-F-92-5068-OWW
(Consolidated Arvin Cases)

12 July 1998

EKI 920056.00

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1.0 STATEMENT OF OPINIONS

1.1 Groundwater Contamination on the Railroad Leased Parcel Originates on the Brown & Bryant Property

Opinion: *Given the evaluations presented in my prior declaration in July 1995 regarding available data on chemical occurrence in subsurface soils on the railroad leased parcel and the Brown & Bryant parcel and a review of more recent information, it is still my opinion that there has not been a release of chemicals of concern on the railroad leased parcel that has resulted in conditions in groundwater that would necessitate remedial response actions. Further, where there are occurrences of chemicals of concern in A-zone groundwater on the railroad leased parcel, such occurrences are readily explainable as the result of contaminant migration from the source areas know to exist on the Brown & Bryant Property.*

My prior declaration, with its supporting materials, presents my opinions regarding occurrence of chemicals in subsurface soils on the railroad leased parcel and the Brown & Bryant. Inc. parcel. See Declaration of Thomas W. Kalinowski in Support of the Atchison, Topeka & Santa Fe Railway Company's and Southern Pacific Transportation Company's Motion for Partial Summary Judgment, dated 3 July 1995. In Exhibit A.

My conclusions regarding chemically impacted soils, contaminating activities, contamination sources, chemicals driving remedial activities, and sources of contamination are described in Exhibit A. Specifically, the confirmed "Brown & Bryant Source Areas" consist of (1) the wash pad and old sump area, (2) the dinoseb area, and (3) the former waste pond, as identified by

the U.S. Environmental Protection Agency ("U.S. EPA") in the Remedial Investigation / Feasibility Study Report (First Operable Unit - Source Control) Brown & Bryant Superfund Site, Arvin, California, prepared by U.S. EPA, Region IX, ("RI/FS"), dated 28 May 1993. See Exhibit A at 16.

Additionally, recent testimony by witnesses has also described spills and leaks of D-D, which contains 1,2-dichloropropane ("1,2-DCP"), in the vicinity of the old D-D bulk storage tank. The old D-D bulk storage tank, which did not have spill containment, was located in the former bulk storage tank area east of the southern end of the former warehouse. See Deposition of John Howard Brown, dated 21 April 1998, pages 840 - 842, and Deposition of Lonnie Dean Merryman, dated 17 December 1997, pages 88 - 100. The subsurface soil and groundwater in the vicinity of the former D-D bulk storage tank has not been adequately investigated by the U.S. EPA. No deep borings or monitoring wells have been drilled in this area. The U.S. Army Corps of Engineers, as design engineers of remedial actions on behalf of U.S. EPA for the Brown & Bryant site, has identified this former bulk tank area east of the warehouse as one of the "areas where additional data are needed". See Figure 1 in Report on the Hydrogeology and the Design of the Proposed Groundwater Extraction System for Brown & Bryant Superfund Site, Arvin, California; Recommendations for Extraction & Handling of A-Zone Groundwater, by the U.S. Army Corps of Engineers, dated 5 August 1994, in Exhibit B. In my opinion, on the basis of the available information on bulk chemical storage, transfer and handling operations, this former D-D bulk

storage tank area is also a Brown & Bryant Source Area.

As detailed in Exhibit A, it is my opinion that the few isolated, very low detections of the chemicals of concern ("COCs") reported in the vadose zone soils on the railroad leased parcel are not the source of the chemicals which are impacting the A-zone groundwater. It is my opinion that the impacted A-zone groundwater, originating from beneath the Source Areas on the Brown & Bryant Property, has over time migrated to the west and south, so that some of it now underlies portions of the railroad leased parcel.

The following finding as stated in the Record of Decision supports these conclusions:

> "The distribution of contaminants was consistent with the locations of the major source areas and follow a pattern consistent with the groundwater flow in the A-zone." See Brown & Bryant, Arvin Facility, First Operable Unit Record of Decision ("ROD"), dated 8 November 1993, page 7.

The Remedial Investigation / Feasibility Study Report describes groundwater flow in the A-zone as follows:

> "Maps of the water table consistently suggest that water moves west and south off the site (Figures 3.6 and 3.7 [of RI])." See RI/FS, page RI-3-5.

The recent declaration by Cynthia Wetmore, the former U.S. EPA Remedial Project Manager ("RPM") for the Brown & Bryant site, states the following regarding groundwater flow in the A-zone:

> "The subsurface investigation has shown that the groundwater in A-zone is migrating into

> the B-zone, but it is also moving generally in the A-zone in a southerly direction in the middle of the facility and a westerly direction in the northwestern boundary of the facility." See Declaration of Cynthia Wetmore in Support of United States' Motion for Summary Judgment, dated 26 May 1998, page 7.

The persistent, strong westerly components in groundwater flow in the A-zone across the western portion of the Brown & Bryant Property and the adjacent railroad leased parcel are illustrated on the A-zone water table elevation maps routinely produced by the U.S. EPA contractor, Ecology and Environment. Inc. ("E&E"). See Exhibit C for the A-zone water table elevation contour maps for sampling dates of 27 February 1995, 6 November 1995, 4 November 1996, and 27 May 1997.

Figure 3.5 of the RI depicts the lithology of the saturated A-zone. See Exhibit D. This map indicates more permeable sands or silty/clayey sands in the southeastern and western portions of the saturated A-zone. Combined with the gradients in the A-zone discussed above, chemical migration to the south and west along these more permeable pathways is expected. EPA concurs in the RI/FS as follows:

> "The pattern of contaminant distribution is consistent with the source areas of soil contamination, with the highest concentrations emanating from the sump and pond areas. The direction of contaminant migration is also consistent with the direction of groundwater flow." See RI/FS, page RI-7-5.

Thus, the patterns of the distributions of COCs in A-zone groundwater as mapped by me previously (see Exhibit A at 24), by E&E in its regular reports of groundwater monitoring results, and most recently by Daniel B. Stephens (see Exhibit E) show the sources of the COC plumes in A-zone groundwater to be from the Brown & Bryant Source Areas. The data depicted on these plume maps show multiple chemicals with overlapping areas of peak concentrations beneath or immediately downgradient of the known Brown & Bryant Source Areas. In all cases, the data depicted on these plume maps show concentrations diminishing radially away from these Source Areas. Further, the data depicted on these plume maps show no significant impacts to A-zone groundwater quality on the northern half of the railroad leased parcel. Given the similarities of these plume configurations for all COCs and my understanding the Brown and Bryant Source Areas, it is my opinion that any detectable COC concentrations on the southern half of the railroad leased parcel are readily explainable as lateral migration from the Brown & Bryant Source Areas.

For example, dinoseb concentrations in groundwater samples from monitoring wells WA-03, WA-04 and WA-05 have been non-detectable over a period of several years. See data in Table 2 in Memorandum from Ralph Lambert of E&E to Michelle Schutz of U.S. EPA, dated 9 February 1998, presented in Exhibit C. These groundwater monitoring data are also mapped by Daniel B. Stephens for monitoring events by E&E in April 1992 and May 1997, and show no occurrences of dinoseb above action levels on the railroad leased parcel except for its extreme southern tip, occurrence of which is clearly resultant from migration from the

nearby Brown & Bryant Source Areas. Therefore, there is no factual basis to conclude releases of dinoseb, if any, originating in soil on the railroad leased parcel have migrated to groundwater resulting in a demonstrable impact.

Even if some molecular level of communication with groundwater has occurred on the railroad leased parcel, the resultant conditions, more likely than not, would not be actionable and did not cause exceedance of maximum contaminant levels ("MCLs"). For example, ethylene dibromide ("EDB"); dinoseb; 1,3-dichloropropane ("1,3-DCP"); chloroform; 1,2-dibromo-3-chloropropane ("DBCP"); and 1,2,3-trichloropropane ("1,2,3- TCP") are routinely non-detectable or well below their respective MCLs or risk based action levels in monitoring wells WA-03, WA-04 and WA-05. Measurable occurrences of these COCs in A-zone groundwater on the railroad leased parcel are readily explainable, as noted above, as migration from the Brown & Bryant Source Areas.

The results cited above for repeated sampling of monitoring wells WA-03 are particularly pertinent in refuting claims expressed by U.S. EPA of chemical migration to groundwater from vadose zone soil on the railroad leased parcel (see U.S. EPA Memorandum from John Lucey to Lisa Castanon dated 9 February 1996). The very low concentrations of chemicals such as 1,2,3-TCP and DBCP reported in soil samples from boring 0 and EDB in boring CA-20 may be laboratory errors or artifacts (see Deposition of Tracey Yerian, dated 1 June 1998, and exhibits, regarding difficulties in calibration of laboratory equipment at FASP laboratory for 1,2,3-TCP and DBCP analyses during March 1990 when boring O was drilled), the result of

sample contamination during drilling or handling, or otherwise not representative of actual soil conditions (see Expert Report by Dr. James Smith). Even assuming that these low detections in vadose zone soil are real, the groundwater sampling results from nearby well WA-03 do not indicate any appreciable chemical migration to groundwater, i.e., levels of these three compounds are consistently non-detectable or below action levels in well WA-03.

Well WA-03 is sufficiently close (within 43 feet of boring O and 11 feet of boring CA-20) and approximately downgradient on many occasions of water level measurements such that any significant chemical migration to groundwater from on-site soil in borings O and CA-20 would be detected in the repeated sampling of groundwater in this well. The A-zone water table elevation maps prepared by E&E indicate a strong westerly flow component in the A-zone groundwater, i.e., toward well WA-03, across the middle of the railroad leased parcel. For example, see the A-zone Water Table Elevation map for 4 November 1996, as prepared by E&E, in Exhibit C.

1,2-DCP is not found in surface soil anywhere on the railroad leased parcel in any borings between the surface and 7-feet below ground surface. 1,2-DCP is found in deeper soil samples on the railroad parcel only in one boring (CA20) out of 19 borings where subsurface soil samples were taken on the railroad leased parcel above a depth of 65 feet, i.e., above the A-zone groundwater table. In that one boring, 1,2 DCP was found at trace concentrations (equal to or less than 80 micrograms per kilogram, "ug/kg" or parts per billion) that are approximately two or more orders of magnitude below the 1,2-DCP concentrations

measured on the Brown & Bryant Property. See Exhibit A, and its Exhibits I-3 and I-4, the cross-sections A-A' and B-B', respectively, for 1,2-dichloropropane concentrations in vadose zone soils.

For the other volatile organic compounds ("VOCs"), EDB, 1,2,3-TCP and DBCP, the soil sample results on the railroad leased parcel are similar to those for 1,2-DCP: non-detectable concentrations in the upper 65 feet of soil on the railroad leased parcel in 17 of 19 borings on the railroad leased parcel. Negligible concentrations of these other VOCs (equal to or less than 50 ug/kg) were reported in only 2 of 19 borings (CA20 and O) drilled on the railroad leased parcel.

After KJC had drilled boring CA-20 on 28 July 1991. E&E installed boring SB-423 on the railroad leased parcel, on 27 October 1991, at a location between prior borings O and CA-20. SB-423 was located 14 feet from boring O and 21 feet from boring CA-20. In boring SB-423, DBCP, EDB, and 1,2-DCP concentrations were non-detectable in all 15 analyzed soil samples taken from the surface to the groundwater table, except for one report of 1,2-DCP at 1 ug/kg at a depth of 33 feet, a result which was "J" and "L" qualified by the laboratory as an approximate value. The duplicate soil sample from SB-423 at the depth of 33 feet did not contain detectable 1,2-DCP. These data from boring SB-423 suggest further that the reported low level detections of certain VOCs in vadose zone boring locations O and CA-20 were erroneous or insignificant.

Furthermore, the U.S. EPA has erroneously asserted that there are no known sources on the Brown & Bryant Property of contaminants such as 1,2-DCP upgradient of Well WA-03 (see U.S. EPA

Memorandum from John Lucey to Lisa Castanon dated 9 February 1996). Notwithstanding the possibility of lateral migration of contaminants such as 1,2-DCP in the vadose zone and in the A-zone groundwater from the massive, confirmed chemical releases in the vicinity of the old sump area on the Brown & Bryant Property, there is testimony regarding the leaks and spills of D-D at the location of the old D-D bulk storage tank. This D-D tank was located near the center of the Brown & Bryant Property east of the southern end of the Brown & Bryant warehouse, almost due east of boring O. This tank was used to store D-D without secondary containment as early as 1968. Leaks and significant spills of D-D occurred in this vicinity of the old D-D tank. See Deposition of John Howard Brown, dated 21 April 1998, pages 840 - 842. See Deposition of Lonnie Dean Merryman, dated 17 December 1997, pages 88 - 100. As noted above, the area of these former bulk storage tanks in the central portion of the Brown & Bryant Property has not been adequately characterized, particularly with respect to chemical releases to deeper soils and A-zone groundwater (see Exhibit B).

Finally, the assertions by U.S. EPA that dinoseb migrated to groundwater in the vicinity of borings BB and CC on the railroad parcel and resulted in groundwater contamination, near WA-03 or anywhere else, are totally without support in the data for the following reasons:

- As noted above and supported by the data and graphical depictions in Exhibits A and E, there is no indication of measurable dinoseb occurrence in groundwater on the northern half of the railroad leased parcel after the repeated sampling of

groundwater from the three nearest monitoring wells.

- Although dinoseb is soluble in water at neutral pH, solubility is not the sole factor in determining a chemical's mobility in vadose soil. Chemical migration can be retarded significantly by sorption to soil particles. U.S. EPA's own modeling studies, as reported in the RI/FS, concluded that dinoseb is not mobile in the vadose zone under conditions of normal percolating rainfall:

  "In both modeling scenarios the transport rates for dinoseb were found to be very slow. Impacts to the A-zone groundwater from the current soil contamination were predicted only after over 400 years ..." See RI/FS, page RI-5-13.

  These dinoseb MULTIMED modeling scenarios from the RI/FS were performed with assumptions of extremely elevated dinoseb concentrations, e.g., greater than 100,000 parts per billion in soil, significantly greater than any reported concentrations of dinoseb on the railroad leased parcel. Even assuming these high dinoseb concentrations in the soil, the modeling by U.S. EPA showed dinoseb to be practically immobile.

- The soil sampling data on the railroad leased parcel and the Brown & Bryant Property show significant retardation and vertical attenuation of dinoseb in the vadose zone, except in the locations of the dinoseb spill area and the former waste pond, where there were significant liquid volumes released and the local hydraulic influence of percolating water from unlined sumps and the pond. See Exhibit A and its Exhibits I-1 and I-2.

- The two soil borings, Sl6A and Sl9A, that were drilled adjacent to borings BB and CC, respectively, did not confirm the detections of dinoseb reported in the analyses of soil samples taken from borings BB and CC.

There is no evidence that dinoseb in borings BB and CC or that any other COC in vadose soil on the railroad leased parcel caused contamination of the A-zone groundwater.

1.2 An Algorithm for Divisibility of Groundwater Impacts Can Be Derived

Opinion: *If it were found that releases of chemicals on the railroad leased parcel had migrated to groundwater, the amount, or mass, of contribution from such migration and, thus, cost of its remediation can be calculated as a divisible share of the total chemical mass present in the* groundwater.

1.2.1 Use of Granular Activated Carbon for Groundwater Treatment

The groundwater remedy for the A-zone groundwater selected in the ROD and described in design documents by the U.S. Army Corps of Engineers ("ACE") is groundwater extraction and treatment by granular activated carbon ("GAC") adsorption. See Exhibit F: See ROD at page 25. See Technology Evaluation Report for Brown & Bryant Superfund Site, Arvin, California: Cost Estimates and Expandability Consideration for Groundwater Treatment Plant, Operable Unit 1, by U.S. Army Corps of Engineers, dated 14 June 1994, pages 1 and 8, and Tables 2 and 3 demonstrating GAC to be cost-effective for the Brown & Bryant site. See Draft Invitation for Bids, Design Analysis, Brown & Bryant, Arvin Facility Superfund Site, First Operable Unit, by U.S. Army Corps of Engineers, dated May 1995, at section 2.12.3 on page DA-5 and at section 2.12.3.6 on page DA-7.

All of the COCs detected in groundwater at the Brown & Bryant site can be treated by a common, conventional treatment technology, namely GAC. See Exhibit G, Speth and Milten, 1990. The extent of adsorption of dissolved volatile organic compounds ("VOCs") and other organics onto GAC can be

described by the Freundlich isotherm equation (Speth and Milten, 1990), as listed below:

$$q_c = KC_e^{1/n} \qquad \text{eq(1)}$$

where,

q_c = adsorption coefficient (ug/g)
K = Freundlich isotherm constant [(ug/g) $(L/ug)^{1/n}$]
C_e = dissolved chemical concentration in water in equilibrium with GAC (ug/L)
1/n = Freundlich isotherm exponent (unitless)

According to the Freundlich isotherm equation, the adsorption coefficient (q_c) is the mass of chemical that will be adsorbed onto the GAC when the GAC is in contact with water containing a dissolved chemical at the concentration C_e. The Freundlich isotherm constants "K" and "1/n" are specific to individual chemicals and are dependent on the type of GAC and the water quality. Freundlich isotherm constants for the seven indicator COCs are listed in Table 1 provided in Exhibit G based on U.S. EPA data presented in *Technical Note: Adsorption Capacity of GAC for Synthetic Organics* (Speth and Milten, 1990), a copy of which is also included in Exhibit G. These data are also referenced in U.S. EPA's *NRMRL Treatability Database, Version 5.0* (U.S. EPA. 1994). Printouts from this database of the Freundlich isotherm data for each of the seven indicator COCs, and the associated references for the data, are included in Exhibit G. The constants listed in Table 1 are all based on laboratory tests using Filtrasorb 400 GAC manufactured by

Calgon Corporation. Results using other types of GAC will be different but can be established for any selected carbon source.

The Freundlich isotherm equation presented above and the data listed in Table 1 can be used to estimate the quantity of GAC required to remove a specific COC from groundwater. Assuming the GAC treatment system is designed and operated to approach the equilibrium conditions used to generate the Freundlich isotherm data, the amount of GAC utilized would be equal to the quantity of the COC in the groundwater divided by its adsorption coefficient, as follows:

$$X = 0.0083 \frac{Q \times C_i}{q_c} \qquad \text{eq(2)}$$

where,

- X = mass of GAC required to adsorb the chemical of concern (pounds)
- Q = volume of groundwater treated (gallons)
- C_i = dissolved concentration of chemical i in groundwater (ug/L)
- q_c = adsorption coefficient (ug/g) [from equation (1)]
- 0.0083 = unit conversion factor, assuming a groundwater density of 8.3 pounds per gallon

As an example, the estimated relative GAC usage rates for the seven indicator COCs are listed in Table 2 in Exhibit G based on equations (1) and (2) above, on the Freundlich isotherm parameters listed in Table 1, and on an assumed concentration of 1,000 ug/L in groundwater for each indicator COC entering the

treatment system. The calculated GAC usage rates are presented in Table 2 as the mass of GAC required for every 1,000 gallons of water treated.

Thus, the divisible contributions of chemicals of concern found to originate on any parcel can be normalized as a fraction of the total residual mass of chemicals found in groundwater under the subject properties and adjacent properties weighted by its adsorption coefficient. For each COC, the GAC adsorption coefficient can be established based on published literature values (such as described above) or on bench scale tests.

1.2.2 Estimation of Total Mass of COCs in A-zone Groundwater

A formulation of the divisibility of A-zone remedial costs attributable to any contribution of a COC to groundwater will begin with quantification of the mass of any such contribution relative to the total mass of all COCs found in groundwater. The total mass of each COC in groundwater can be described as the sum of COC mass in the following compartments:

- "Dissolved mass" is that mass of a COC dissolved in the water filled pore spaces of the saturated zone. By definition, the dissolved mass of a chemical is that concentration of a chemical in solution below its solubility times the volume of water present within the water-filled pore spaces. See Cohen, et al., 1993. Dissolved mass of a specific chemical in a defined volume of the saturated zone can be calculated as follows:

$$\text{Dissolved Mass} = C_i \times \quad \times A \times L \times (2.832 \times 10^{-8}) \qquad \text{eq(3)}$$

where,

C_i = dissolved concentration of chemical i in groundwater (ug/L)
θ = water filled porosity (unitless)
A = area of saturated zone (ft^2)
L = thickness of saturated zone (ft)

- "Sorbed mass" is that mass of a COC adhering to the surface of the soil particles present in the saturated zone soils. Sorbed mass is a function of soil and chemical specific properties including the fraction of organic carbon ("foc") of the soil and the sorption properties of the chemical often expressed as the organic carbon partition coefficient ("Koc"). See Cohen, et al., 1993. Sorbed mass of a specific chemical in a defined volume of the saturated zone can be calculated as follows:

$$\text{Sorbed Mass} = C_i \times Koc \times foc \times \rho_b \times A \times L \times (2.832 \times 10^{-8}) \quad \text{eq(4)}$$

where,

C_i = dissolved concentration of chemical i in groundwater (ug/L)
Koc= organic carbon partition coefficient of chemical i (mL/g)
foc = fraction organic carbon (unitless)
ρ_b = dry bulk density (gm/cm^3)
A = area of saturated zone (ft^2)
L = thickness of saturated zone (ft)

- "DNAPL mass", i.e., the dense non-aqueous phase liquid mass, is that mass of a COC present in the pore spaces of the saturated zone as undissolved

liquid. The DNAPL mass can be estimated based on the properties of the saturated zone and the chemical. The DNAPL mass is calculated as the volume of DNAPL in the saturated zone multiplied by the density of the DNAPL. See Cohen, et al., 1993.

- The "total mass" of chemicals present in groundwater can be estimated as the sum of the dissolved mass and mass sorbed to saturated zone soils plus the DNAPL mass present as follows:

  Total Mass = Dissolved Mass + Sorbed Mass + DNAPL Mass eq(5)

I have made estimates of the dissolved mass and sorbed mass of the seven indicator COCs in the A-zone groundwater beneath the Brown & Bryant site. The indicator COCs are the following: 1,2-DCP; 1,2,3-TCP; DBCP; chloroform; 1,3-DCP; EDB and dinoseb. The dissolved masses and sorbed masses of each of these COCs are estimated from the plume maps of COC occurrence in the A-zone groundwater as depicted by Daniel B. Stephens for the most recent available data set: May 1997 for all COCs except dinoseb for which November 1996 was the most recent valid data set. See Exhibit E.

As summarized in Exhibit H, the dissolved mass for each COC can be calculated with equation (3). The sorbed mass for each COC can be calculated with equation (4). The input values for site-specific saturated zone parameters and chemical specific parameters are listed in Tables 1 and 2 in Exhibit H. For example, the A-zone saturated thickness is assumed to be 10 feet, and the formation porosity is assumed to be 40 percent in accordance with

information provided in the RI/FS. EPA has estimated the saturated thickness of the A-zone below the Brown & Bryant facility to range from 0 to 10 feet thick, with an average of 4.5 feet. See RI/FS, page RI-3-6. The water filled volumes of the A-zone saturated thickness are calculated for each COC concentration contour interval shown on the Daniel B. Stephens figures found in Exhibit E. The annular areas, in square feet, between contours on these figures are integrated by computer using AutoCAD Release 14 (see figures presented in Exhibit H). Tables 3 through 9 present the calculations for dissolved and sorbed masses for each of the indicator COCs (see Exhibit H).

Using the parameters and maximum values noted above and in Exhibit H, the sums of the estimated dissolved mass and sorbed mass of each indicator COC in A-zone groundwater are as follows:

Chemical of Concern	Dissolved Mass (kg)	Sorbed Mass (kg)	Total Mass (kg)
1,2-DCP	418	85	503
1,2,3-TCP	25	7.2	32
DBCP	3.7	2.1	5.8
chloroform	3.2	1.1	4.3
1,3-DCP	1.0	0.56	1.6
EDB	0.14	0.037	0.18
dinoseb	6.5	3.2	9.7
TOTAL	458	99	557

The above estimated masses exclude any DNAPL masses determined to be present in the A-zone groundwater. If DNAPL mass is judged to be present, the Total Mass present in the A-zone groundwater can be calculated from equation 5 above. Excluding DNAPL mass, the sum of the dissolved and sorbed masses for the seven indicator COCs is approximately 557 kilograms, or 1,220 pounds.

1.2.3 Estimation of Fraction of Groundwater Remedial Action Costs Attributable to a Mass Input

All of the indicator COCs are amenable to groundwater extraction and treatment by GAC in accordance with the remedy selected in the ROD, as discussed above. Therefore, the relative fraction of COC mass contribution from any specific source or geographic area, when determined, can be calculated as follows:

$$\text{Mass Fraction Contribution} = M_i / \text{Total Mass} \qquad \text{eq(6)}$$

Where,

M_i = the mass of chemical "i" determined to originate in a separate source or area Total Mass = the sum of the mass of all chemicals determined by equation (5)

If DNAPL mass is determined to be present, it can be included in the denominator in the total mass according to equation (5).

Using the approach outlined in the prior section, this mass fraction determined for any particular COC, weighted by its relative carbon adsorption coefficient if desired, could be used to evaluate the predicted incremental consumption of GAC at the groundwater treatment facility. Thus, a divisible contribution to remedial action costs is possible based on such a COC contribution from any specific source or specific area where the mass of that COC discharged to A-zone groundwater is separately determined.

The relative mass fractions for each indicator COC that are present within the A-zone concentration contours are also stated in Tables 3 through 9 in Exhibit H. It can be seen from the relative mass fractions for each concentration interval in Tables 3 through 9 that the overwhelming majority of the total chemical masses reside in the high concentration areas in proximity to the Brown & Bryant Source Areas. For example, for 1,2-DCP, 99% of the combined, dissolved and sorbed mass is located in the A-zone high concentration area within and greater than the 1,000 parts per billion, "ppb", contour, which is located beneath, south and west of the Brown & Bryant Source Areas (see 1,2-

DCP figure in Exhibit H). This predominant mass fraction of 1,2-DCP within the high concentration area beneath and near the Brown & Bryant Source Areas would be significantly greater if DNAPL mass were included.

This finding of overlapping centers of chemical masses for multiple chemicals further supports the conclusion that massive releases of these COCs occurred in the Source Areas and that lateral dispersion and migration accounts for the observed declining peripheral concentrations of COCs detected in A-zone groundwater. There are no separate peak concentration areas outside of the identified Source Areas on the Brown & Bryant Property that suggest any additional significant sources of A-zone groundwater contamination. U.S. EPA's groundwater monitoring data for wells WA-03, WA-04 and WA-05 repeatedly indicate non-detectable or low concentrations consistent with the plume configurations discussed above, i.e., there is no suggestion in the data of significant dissolved or sorbed mass contribution in the A-zone groundwater below the railroad leased parcel.

JA-365

[Trial Exhibit G-6]

Expert Opinions of

Daniel B. Stephens, Ph.D, P.Hg., R.G.

In the matter of

The Atchison, Topeka & Santa Fe Railroad

Company, et al. vs.

Brown & Bryant, Inc. et al.

July 8, 1998 /s/Daniel B. Stephens
[Certified Hydrogeologist]
[stamp from State of]
[California]

[logo omitted] Daniel B. Stephens & Associates, Inc.
6020 Academy NE, Suite 100•
Albuquerque, New Mexico 87109

* * *

1.3 History of Chemical Use and Storage

Brown & Bryant operated an agricultural chemical dealership in Arvin, California, from 1960 through 1988. Up until 1975, they operated on the eastern portion of the site ("Brown & Bryant Property," Figure 1), an area of approximately 3.8 acres. It is apparent from a 1967 aerial photograph (Figure 2) that there was a large-scale operation on the Brown & Bryant property long before the lease property was acquired. In December of 1975, a one-acre parcel to the west of the Brown & Bryant property was leased from the Railroads (leased property) for the purpose of parking fertilizer rigs.

Brown & Bryant was engaged in the sale, distribution, and application of fertilizers, pesticides (including insecticides and fumigants), fungicides, and herbicides from 1960 through 1988. Operations included receipt of bulk and prepackaged products, sale to local farmers, and assistance to farmers in applying the products. Prepackaged products were stored in the warehouse on the western portion of the property (Canonie Environmental [Canonie], 1988a, p.3). Brown & Bryant handled a range of pesticides and herbicides; however, the primary products that contain chemicals of concern (COCs) are presented in Table 1.

Chemicals arrived at the site by truck or rail. After the railroad tracks were decommissioned in 1975, chemical products typically arrived at the site by truck (Canonie, 1988a, p.3), and bulk product was transferred into on-site holding tanks.

Gross contamination of the soil and groundwater resulted primarily from poor housekeeping and

releases to a surface pond and sumps (U.S. EPA, 1993b, p.3). A variety of poor housekeeping practices led to contamination of both soil and groundwater, as will be discussed in subsequent sections of this report. Leaks of prepackaged product were common, for example, in the warehouse. Spills occurred while bulk product was unloaded and transferred to on-site tanks. On-site tanks were not properly maintained and were allowed to leak. Spent product containers were crushed on bare ground and allowed to ooze residual product into the soil. All of these practices over almost 30 years of operation culminated in contamination of both soil and groundwater on the Brown & Bryant property.

In addition to poor housekeeping practices, the two major sources of contamination to soil and groundwater at the site were a sump and a pond (Figure 1). Both of these structures were unlined from 1960 through 1979 and introduced large amounts of pesticide- and herbicide-laden liquids into the subsurface soil beneath them and subsequently into groundwater. A large plume of contaminated soil and groundwater exists beneath each of these structures. As much as 2,000 to 4,000 gallons of rinse water were input to the sump each month (Sturgess, 1983; Prine, 1989, p.8). A consultant for Brown & Bryant (Sturgess, 1983) indicated that the rinse water contained "... DNBP [Dinoseb], Telone, D-D [1,2-DCP, 1,3-DCP, and 1,2,3-TCP (Spectrum, 1998; NIH, 1998)], Prowl, Treflan, Diazinon, Imidon, and Guthion." These chemicals are considered hazardous, and rinse water may have contained contaminant levels many orders of magnitude above regulatory limits. In fact, laboratory measurements from samples of rinse waters indicated

that they were considered hazardous (McLaughlin, 1983b).

On at least two occasions, regulators noted these poor housekeeping and waste-handling practices. The California Department of Health Services (DOHS, 1983) characterized the housekeeping at the facility as "very poor" in a May 25, 1983, hazardous waste management report. The report cited the following observations:

- "Hazardous wastes (pesticide rinse waters) disposed of on-site in a pond with no DOHS permit or authorization...
- Hazardous waste disposed of with no hazardous waste manifest (empty containers, defective materials)
- There are numerous spills of fertilizer compounds, pesticides, herbicides, oils, etc. most on dirt
- Empty and partially full waste containers are stored on dirt, many in deteriorated condition
- Wash rack drain was plugged and ready to overflow to dirt

2. Opinions

Based on my analysis of site conditions, as well as a review of depositions and technical reports that have been developed for the site, it is my opinion that:

1. Groundwater contamination reported beneath the leased property is the result of hazardous substances released on the Brown & Bryant property and was not caused by releases at the surface of the leased property.

2. Sampling data relied upon by the U.S. Environmental Protection Agency (EPA) do not show that releases of hazardous substances on the surface of the leased property have communicated with groundwater beneath the leased property.

3. The reported releases of hazardous substances at the leased property did not trigger response costs, and will not trigger any costs in the future.

A complete discussion of the information and analyses that have led me to these conclusions is provided in Sections 2.1 through 2.3.

2.1 Groundwater Contamination Reported Beneath the Leased Property Is the Result of Hazardous Substances Released on the Brown & Bryant Property and Was Not Caused by Releases at the Surface of the Leased Property

The bases for this opinion are the chemicals in groundwater on the leased property, sources of releases on the Brown & Bryant property, soil contamination on the Brown & Bryant property, contaminant distribution and migration in groundwater, and modeling of contaminant transport in groundwater from the Brown & Bryant sources to the leased property.

There are two water-bearing units of interest, the A-zone and B-zone groundwater. The term A-zone refers to the first groundwater encountered beneath the leased and Brown & Bryant properties, at a depth of approximately 70 feet below ground surface (bgs). The saturated portion of the A-zone is composed of thinly

bedded clays, silts, and sands, and averages about 5 feet thick (U.S. EPA, 1993b, pp. RI-3-4 and RI-3-6). The B-zone refers to a deeper aquifer where groundwater is encountered at a depth of approximately 160 feet bgs (Ecology and Environment, Inc., 1998). The B-zone is composed of silty sands to gravelly sands, and extends to depths greater than 200 feet (U.S. EPA, 1993b, p.RI-3-7). The B-zone is part of the regional aquifer system, whereas the overlying A-zone is likely perched on relatively low-permeability silt and clay. At present, the direction of groundwater flow in the A-zone is generally to the west and southwest. But, groundwater also leaks downward from the A-zone and recharges the B-zone. According to the Record of Decision (ROD) (U.S. EPA, 1993a), remediation of the A-zone is necessary in order to protect the B-zone from further contamination.

2.1.1 Organic Chemicals in Groundwater Beneath the Leased Property Are the Same as Those Found in Groundwater and Soil Beneath the Brown & Bryant Property

The commonly occurring COCs in groundwater beneath the leased property include 1,2-dichloropropane (1,2-DCP), 1,3-dichloropropane (1,3-DCP), 1,2,3-trichloropropane (1,2,3-TCP), chloroform, dibromochloropropane (DBCP), ethylene dibromide (EDB) and 2-sec-butyl-4,6-dinitrophenol (Dinoseb). Except for 1,3-DCP, this group comprises the COCs that drive remediation, according to EPA in its ROD (U.S. EPA, 1993a; p.12).

All of these chemicals are present in large quantities in both soil and groundwater on the Brown & Bryant property. As discussed below and throughout this document, the quantity of hazardous chemicals

reportedly released at and found in soil and groundwater on the Brown & Bryant property today dwarf the quantity found on the leased property. Therefore, I conclude that COCs in groundwater beneath the leased property are the result of significant upgradient source areas on the Brown & Bryant property.

This opinion is based on analyses from monitor wells WA-3, WA-4, WA-6, and WA-7, which were sampled periodically from 1990 through 1997 (Tables 2a and 2b). (Although an additional sampling event occurred in January of 1998, EPA has not yet provided these data.)

The locations of monitor wells WA-3, WA-4, WA-6, and WA-7 are presented in Figure 3. Actually, only WA-3 and WA-4 are located on the leased property. Monitor well WA-6 is on the west side of the Brown & Bryant property, and monitor well WA-7 is located off-site, just west of the leased property. Because wells WA-6 and WA-7 straddle the southern part of the leased property and contain the COCs discussed above, and based on my knowledge of the hydrogeology of this site, I conclude that the same COCs are also present in groundwater beneath the southern part of the leased property. As will be discussed later, all seven COCs occur in groundwater only in this southern section of the leased property. Only some of the chemicals have been detected in WA-3 and WA-4 in the central and northern part of the leased property, and when detected, their concentrations are always much lower than in the southern part in wells WA-6 and WA-7 (Figure 4). Concentrations of the same COCs in upgradient monitor wells on the Brown & Bryant property are much higher.

2.1.2 The COCs Driving Remediation Are Associated with Storage, Intentional Releases, and Spillage to Disposal Facilities on the Brown & Bryant Property

Brown & Bryant stored a variety of chemicals at various areas on the site. The number and types of tanks and the locations of open storage that occurred during the history of the Brown & Bryant property are many and varied. U.S. EPA (1989) discusses the state of the site at several times during its operational history. In 1961, the site had "13 uncontained vertical tanks, 2 uncontained horizontal tanks,...and open storage of unidentified objects." By 1973, "the main storage area now contains six uncontained vertical tanks." By 1975, "the most significant feature is the large amount of open storage areas containing crates, 2 drum storage areas, 27 horizontal tanks, 15 vertical tanks, [and] unidentified cylindrical objects..." EPA also identifies 10 uncontained vertical tanks (Figure 5). U.S. EPA (1993b) also states that beginning in the mid-1970s, tanks and drums were stored along the eastern fence line. By 1981, "There are apparently no areas set aside for open storage but instead the entire facility is being used and storage is random. Scattered throughout the site are numerous crates, 33 horizontal tanks, 11 vertical tanks, a railroad tank truck being used for storage, ...7 tanks trucks, 10 pressure tanks, uncontained drum storage, and numerous unidentified objects." A "large spill stain" is visible in the main chemical storage area with "10 uncontained vertical tanks" (Figure 6). Thus, it is apparent that storage was sloppy and haphazard on the Brown & Bryant property; releases occurred often, and spillage was common.

Containers noted in the storage area during a July 28, 1983, site visit by California DOHS staff (McLaughlin, 1983a) included Prowl [Pendimethalin, or N-(1-ethylpropyl)-2,6-dinitro-3,4-xylidine, a selective herbicide used to control annual grasses and certain broadleaf weeds], Eptam [EPTC, or S-ethyl dipropylthiocarbamate, a selective herbicide used to control annual grassy weeds, perennial weeds, and some broadleaf weeds], Tillam [Pebulate, or Butylethylcarbamothioic acid S-propyl ester, a selective herbicide], Roundup [Glyphosate, or N-(Phosphonomethyl)glycine, a nonselective, systemic herbicide used to control annual and perennial plants including grasses, sedges, broad-leaved weeds, and woody plants], Pydrin [Fenvalerate, or α-cyano-3-phenoxybenzyl-2-(4-chlorophenyl)-3-methylbutyrate, a synthetic insecticide that is used on a variety of pests such as moths, flies, beetles, and other insects], Copper Count N [copper ammonium carbonate], Caparol [Prometryn, or N,N^1-Bis(1-methylethyl)-6-methylthio-1,3,5-triazine-2,4-diamine, a selective herbicide used to control annual grasses and broadleaf weeds], BeeBee Weedkiller D [Dinoseb], Parathion [O,O-diethyl O-p-nitrophenyl phosphorothioate, a broad spectrum pesticide used to control many insects and mites], Malathion [(Dimethoxyphosphinothioyl)thio]butanedioic acid diethyl ester, a nonsystemic, broad spectrum insecticide], Kelthane [Dicofol, or 1,1-bis(p-chlorophenyl)-2,2,2-trichloroethanol, a miticide used on many fruit, vegetable, ornamental, and field crops], Treflan [Trifluralin or α,α,α-trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine, a selective herbicide used to control many annual grasses and broadleaf weeds in a

variety of tree fruit, nut, vegetable, and grain crops, including soybeans, sunflowers, cotton, and alfalfa], Dinitroamine [Dinitramine or N^4N^4-Diethyl-α,α,α-trifluoro-3.5-dinitrotoluene-2.4-diamine, a selective preemergence herbicide used for many annual grasses, broadleaf weeds in cotton, ground-nuts, soybeans, and sunflowers], Duter [Triphenyltin hydroxide, or hydroxytriphenylstannane, a fungicide and antifeeding compound for insect control], Devrinol [Napropamide, or N,N-diethyl-2-(1-naphthyloxy)propionamide, a selective systemic herbicide used to control some annual grasses and broad-leaved weeds], Betami[x] [Phenmedipham, or 3-(Methylphenyl)carbamic acid 3-[(methoxycarbonyl)amino]phenyl ester, a herbicide], Maneb [ethylenebis(dithiocarbamato)]manganese, a fungicide used to control early and late blights on potatoes and tomatoes as well as many other diseases of fruits, vegetables, field crops, and ornamentals], Premerge-3 [Dinoseb], and Temik [Aldicarb, or 2-methyl-2-(methylthio)propionaldehyde O-(methylcarbamoyl)oxime, a very toxic systemic insecticide] (Chemical data were taken from EXTOXNET [1998], Chemfinder [1995], the Merck Index [Budavari, 1989], and the Farm Chemicals Handbook '95).

Nemagon (DBCP) that had been reformulated and repackaged as "BeeBee Nemagon" at the Brown & Bryant Shafter facility was delivered to the Arvin facility in 5- and 30-gallon containers (Brown, 1998, p.815). However, the Arvin facility primarily dealt in the products containing 1,2-DCP, 1,3-DCP, and 1,2,3-TCP known as D-D, rather the DBCP-based product Nemagon (Brown, 1998, pp.817-818). D-D was stored in a bulk tank (Figure 1, Tank C) north of the sump area from 1960 through 1981 until Tank D and the

concrete containment area were built (Hargis + Montgomery, Inc., 1984a). D-D was stored in Tank D until it was banned in 1984. In about 1979, Nemagon as sold by Shell was withdrawn from the market (Brown, 1998, p.820). EDB was delivered to the site in bulk tanker truckloads of approximately 5,000 gallons and stored on the Brown & Bryant property in a bulk tank (Brown, 1998, pp.821-822).

2.1.2.1 Releases During Facility Operation

Unequivocally, releases from the sump and pond occurred because (1) the facilities were used for roughly 20 years without protective liners, (2) the underlying soils are moderately permeable, and (3) the chemicals are found in the underlying soils in high concentrations.

Rinsing of chemical storage tanks was the primary operation that led to these releases. Because tanker trucks typically carried a variety of materials, they had to be washed out before being loaded with a different product. The tanker trucks were rinsed on concrete pads, and the rinsate drained into the unlined sump (Canonie, 1988a). For example, tank trucks, kit tanks, and nurse tanks that had contained D-D were washed out into the unlined earthen sump (Brown, 1998, p.830; Dickey, 1998, pp.30-32).

The location of the first sump area is shown in Figure 1 in the south-central part of the Brown & Bryant property. At least until about 1975, EPA identified the sump as a broad depression in the vicinity of the wash pads (U.S. EPA, 1993b, Figure 1.3 [see Figure 1] and U.S. EPA, 1989, Figure 6 [see Figure 5]). The dimensions of the unlined sump were approximately 100 by 75 feet, with an area of approximately 6,300 square feet and an unknown depth (U.S. EPA, 1993b,

Figure 1.3). Overflow from the sump was routed through a 4-inch polyvinyl chloride pipe to an unlined surface impoundment in the southeast part of the property (Canonie, 1988a). According to Merryman (1997, p.151:5), every winter "it would flood down at the southeast end where the sump was. Before they put the lined sump in and raised it up and built it up, it used to be one big pond out there. You couldn't tell where the sump was and where it wasn't."

In early 1980, the unlined sump was replaced with the double-lined sumps 1 and 2, which consisted of two prefabricated concrete boxes placed side by side (Figure 1) in order to curtail seepage. At the same time, two double-lined sand traps were installed west of the pond (Canonie, 1988a). The reported dimensions of each of the sumps and sand traps vary from 7 to 8 feet wide (Smith & Associates, 1983; Brown, 1998, p. 790) by 12 feet long (Brown, 1998, p. 790), and by 8 to 12 feet deep (Brown, 1998, p. 790; Canonie, 1988a).

In 1984, both wash pad drains, which drained to sumps 1 and 2, were plugged, and in 1987 the sumps were excavated and backfilled (Canonie, 1998a). In their place, a contained rinse system with a concrete pad was constructed at the north-central part of the Brown & Bryant property (Figure 1). The contained rinse area included a wash area and a northern and a southern sump. The northern sump and wash area were used for cleaning tanker trucks that transported pesticides. Water from the northern sump was stored temporarily in a 5,000-gallon polyethylene tank located between the north and south wash areas. The southern sump and wash area were used for cleaning vehicles that transported fertilizers. Water from the sump was

pumped into a 130,000-gallon water storage tank (Canonie, 1988a).

The pond was constructed in 1960 when the site initially became operational. The unlined pond had a surface area of about 8,200 square feet (0.2 acre), and when full, the free liquid depth in the pond was roughly 10 feet deep (Smith & Associates, 1983). From 1960 through 1979, the unlined pond was used to collect rinsate from the wash pad and rainwater runoff from the yard (Merryman, 1997, p.26). Rainwater that collected in the pond was likely contaminated because it contacted site surface soils contaminated by surface spills. During the rainy season in Arvin, the maximum volume of the pond was estimated to be 120,000 gallons. During the early 1970s, the pond overflowed and breached the east fence line berm. Water collected in a low area to the southeast of the pond (U.S. EPA, 1993b). In November of 1979, the pond was lined with a synthetic liner. However, the California DOHS found the liner thickness inadequate (DOHS, 1983). During the late summer and fall of 1987, contaminated soils were excavated from the pond, the original liner was removed, and another liner was then installed (Prine, 1989). A flood in October of 1987 or 1988 lifted the liner from its foundation (Leary, 1997, pp.128-130; Mack, 1998, pp.49-50). Subsequent soil and groundwater sampling in the vicinity of the sump area and the pond show all COCs present at extremely high concentrations.

The majority of the operating period of the sump and pond occurred prior to December of 1975, when the leased property became active. Given the large amount of contaminated water that was disposed of in the sump and pond, contaminants would have begun to

reach the A-zone groundwater soon after the Brown & Bryant facility became operational. Therefore, I conclude that the majority of releases to soil and groundwater from the sump and pond occurred prior to the railroad's lease agreement with Brown & Bryant.

2.1.2.2 Releases From Spills and Leaks

Deposition testimony indicates that bulk product was transported in liquid form from suppliers such as Shell Chemical Company or Dow Chemical Company, who transferred the product to on-site storage tanks (Dickey, 1998, pp.15 and 28). Brown & Bryant drivers filled their tank trucks or pull rigs (tank on a bed towed by a truck) with fumigants from the storage tanks (Dickey, 1998, pp.26-28). Christopher Weden, the EPA on-scene coordinator, reported that "some of the tanks had small corroded holes that could have resulted in leaks from the tanks" (Weden, 1998, p.8). The locations of storage tanks are shown in Figure 1.

Leaks at the D-D tank were common due to the corrosive nature of this chemical (Brown, 1998, pp.840-841). The tank was set on a bed of gravel, which was in direct contact with bare soil (Brown, 1998, p.845). This placement would have provided a direct conduit to subsurface soils (Swain, 1998, p.128). Spills also commonly occurred as the tanks were filled by suppliers and as smaller tanks were filled by Brown & Bryant drivers. For example, Charles Dickey recounts an incident that occurred during a delivery where a hose transferring D-D from one tank to another was over-pressurized, blew out of the tank, and spilled approximately 10 gallons of D-D onto the ground (Dickey, 1998, pp.21-25). Merryman (1997, pp.91-94) stated that he had observed spills as large as several gallons on bare ground just east of the D-D tank.

Darkened areas in the vicinity of the bulk storage area visible in a 1981 aerial photograph (Figure 6) are soil stains likely attributable to spills of product. Similar stains are visible in the photograph taken June 15, 1960 (Figure 7).

Dinoseb, a weed killer, was brought to the site in liquid form in 5-gallon containers, stacked on pallets, and stored in the warehouse on the northwest side of the Brown & Bryant property (Brown, 1998, pp.852-853). The warehouse was constructed in 1960, and a narrow concrete pad was added to the west side of the warehouse in 1976 after Brown & Bryant leased property from the Railroads. This long narrow concrete pad is located mostly on the leased property (see Figure 1).

Dinoseb spills were common in the warehouse because the Dinoseb "ate right through the 5-gallon cans fast" (Brown, 1998, p.852). Sometimes those spills would be washed down (Brown, 1998, p.853), which may have facilitated transport of the Dinoseb through joints or cracks in the concrete floor to the soil below. Dinoseb was also commonly stored on the concrete pad west of the warehouse (Brown, 1998, p.854). Spills on the concrete pad or Dinoseb-contaminated kitty litter would be swept off the west side of the open storage area into the vicinity of borings BB and CC. Brown (1998, p.986) stated that "Every once in a while, a can would ...leak on the concrete pad. ...[T]here would be a big puddle of Dinoseb on there[, and] kitty litter would be put on that, and then it would be swept off onto the railroad property or washed off onto the railroad property" (Brown, 1998, p.986). Apparently this happened "three or four times at least" (Brown, 1998, p.987).

One Dinoseb spill in particular, which was described as "making a big mess" (Brown, 1998, p.856), occurred in the southeastern portion of the warehouse. Field reports (Roger McClaflin, 1998, pp.45 and 51) disclose the presence of a yellow substance beneath the concrete floor of the warehouse that is generally consistent with the description of Dinoseb; however, no soil samples were collected of this material (ICF, 1991, p.15).

Empty cans of Dinoseb (as well as other products) were crushed in the can crushing area (Figure 1). These included 1-, 2 1/2-, and 5-gallon cans (Merryman, 1997, p.84). John Brown stated that "I've seen that fence where you couldn't see the fence it was so lined with [empty] cans" (Brown, 1998, p.940). According to Merryman (1997, pp.84-85) "when they started crushing...the five-gallon cans, the ground would get kind of messy back there." In fact, the area where the can crushing took place was described as 3 inches deep "in mud and liquid" (Merryman, 1997, p.89). Initially, the cans were stored and crushed on the bare ground, but in 1979 or 1980, an 8- by 10-foot concrete slab was constructed to hold the empty can prior to crushing. However, the cans were still crushed over bare ground, most likely in the topographic low between the slab and the UN-32 tank. After the cans were crushed, they were sent to a landfill (Merryman, 1997, pp.86-87). As well as being stored in the can crushing area, empty cans were apparently stored throughout the site (see open storage areas in Figure 5).

Dinoseb was also stored in bulk form in a tank located along the east fence line, known as Tank 8. A number of Dinoseb spills have been documented from Tank 8, just northeast of the pond (Figure 1). A passage from a

memo detailing a July 28, 1983 site visit by DOHS (DOHS, 1983) states that "Mr. Brown also mentioned...that they had a Dinoseb spill from Tank 8, again, the previous day." In a September 20, 1983 memo (McLaughlin, 1983b), the DOHS indicated that "Mr. Bullard, a yard foreman for Brown & Bryant, stated at the time of inspection that the tank had leaked over a long period of time." Figure 8 shows the distribution of Dinoseb beneath this spill area.

2.1.3 Soils on the Brown & Bryant Property Have Been Extensively Impacted

Surface soils on the Brown & Bryant property have been extensively impacted by releases on the Brown & Bryant property. Surface soils are defined as soils within 7 feet of land surface in the ROD (U.S. EPA, 1993a, p.13). The occurrence of Dinoseb surface soil contamination that requires remediation is confined exclusively to the Brown & Bryant property; contaminant levels in surface soils on the leased property are too low to require remediation, according to cleanup requirements presented in the ROD (Figure 9). Subsurface soils on the Brown & Bryant property have been extensively impacted by releases there to depths as great as 150 feet bgs. These impacted soils act as a continuing source of contaminants to groundwater beneath and downgradient from the Brown & Bryant property (Figures 8 and 14 through 20). In addition, it is clear that contamination from upgradient sources on the Brown & Bryant property has impacted soils beneath the leased property (see Figures 14, 15, and 16).

There is an excellent correlation between the occurrence of surface soil contamination and known operations on the Brown & Bryant property that led to

those releases, such as near the former sump and pond and Dinoseb spill area at Tank 8. However, on the Brown & Bryant property, several other areas have not been sufficiently investigated with soil sampling, including (1) soils near the contained rinse system, (2) soils in the vicinity of the D-D tanks, (3) soils around the tank farm south of the contained rinse system, (4) stained soils around the east side of the warehouse (Figure 10), and (5) the drum storage area north of the warehouse (Figures 5 and 7). Other incompletely investigated potential sources include soils along the piping that joins the sump and pond (Figure 1) and the can crushing area (Figure 10). A work plan prepared by Canonie (1988b) showed a proposed sampling grid that would have evaluated some of these areas; however, most of the proposed locations were never sampled by EPA's contractor. Figure 11 highlights the large area on the Brown & Bryant property that has not been characterized. Figures 12 and 13 show the location of chemical tanks, facilities, and stained soil areas in the northern half of the Brown & Bryant property with the uncharacterized area overlain. In fact, the lack of proper characterization in the vicinity of the bulk tanks was specifically discussed in the minutes from a January 4, 1990 meeting between EPA and Ecology and Environment, Inc. (Woody, 1998, Exhibit 4, p.2). The memo states that

> "Tank Area had only one boring; at least two more borings are need [sic] in the area and near the former storage area (just south of the large tank)
>
> The 1989 aerial photograph showed a stain in the tank area extending to the former storage area."

Consequently, it seems likely that additional releases may have occurred, and therefore there are significant source areas that have not been characterized.

Deep soil samples (below 7 feet) show that releases on the Brown & Bryant property clearly impacted both deep soil and groundwater (Figures 14 through 20 and Appendix C). The fumigant constituents 1,2,3-TCP, 1,2-DCP, 1,3-DCP, DBCP, and EDB occur in soil primarily in the vicinity of the sump. Dinoseb occurs in soil primarily near the surface in the vicinity of the Dinoseb spill area (Figures 8 and 21), and at several other surface locations (SS-411, SS-110, and SS-105).

In the southeast part of the Brown & Bryant property, soil beneath the Dinoseb spill area at 10 feet bgs in boring C contains 5,100,000 micrograms per kilogram (µg/kg) of Dinoseb, which is about 60 times greater than the surface soil cleanup criterion (80,000 µg/kg). Although much of the Dinoseb spill mass released in 1983 has remained in soil in the vicinity of the spill, impacts have occurred to at least 50 feet bgs, the maximum boring depth, where Dinoseb concentrations reach about 189 µg/kg in boring AA.

On the Brown & Bryant property, note the high concentration of COCs throughout the vadose zone, within the A-zone groundwater, and below the A-zone to depths of 150 feet (Figures 14 through 20). Concentrations of 1,2-DCP and DBCP near the sump and of Dinoseb near the sump and Dinoseb spill area are so large that dense nonaqueous-phase liquid (DNAPL) likely exists in the soil. In fact, the significant depth of liquid fumigant migration below the sump and pond is in part caused by the high density of DNAPLs and their propensity to move downward through the soil column under the influence of gravity.

The continuous release of water containing dissolved contaminants and dense liquids to the unlined sump and pond created a local head of liquid that seeped for nearly 20 years, causing deep migration of the COCs. Even after the sump and pond were lined, DNAPLs and dissolved-phase contaminants in soil would slowly drain by gravity toward the water table, leaving the residue behind in soil. Releases from these and other sources at the Brown & Bryant facility migrated through soil to groundwater and then westerly in the A-zone to areas beneath the leased property (Section 2.1.4).

Soils on the leased property likely were impacted by surface releases on the Brown & Bryant property that washed by surface runoff from potential sources north of the warehouse onto the leased property (Figure 22). For example, note the elevated Dinoseb concentration (7,000 µg/kg) in the surface sample at boring S, which is located about 40 feet north of the drums that were visible in 1960 at the north end of the warehouse (Figure 7). It is probable that the Dinoseb first migrated onto the leased property from the Brown & Bryant property by a surface pathway prior to 1975. Field inspection of the area reveals decomposed asphalt (Figure 23) and corrosion at the base of the metal siding on the northwest corner of the warehouse. These effects were likely caused by corrosive chemicals such as Dinoseb, although no soil samples were collected beneath the drum storage area; consequently, soil concentrations may have been much greater than at boring S.

Soil from borings BB and CC, on the northeast edge of the leased property adjoining the warehouse, contains reported concentrations of Dinoseb as high as 16,572

µg/kg. These borings are located downslope from this drum storage area (Figure 22). Deposition testimony indicated that the corrosive Dinoseb was also stored on the concrete pad west of the warehouse and that spillage would be swept onto the leased property (Brown, 1998, Section 2.1.2.2).

Additionally, after December of 1975 vehicles entered the north gate to the Brown & Bryant property and traveled across the north end of the warehouse drum storage area, and possibly across the area where Dinoseb was washed off the concrete pad, to reach the west side parking lot. Chemicals in soil from releases on the Brown & Bryant property would have been transported and dispersed to the leased property on the tires and undersides of the vehicles.

When the site was initially leased by Brown & Bryant, it was oiled to seal the surface (Merryman, 1997, p.22). Apparently, this was done every year thereafter (Merryman, 1997, p.154). In fact, Brown & Bryant's consultant reported that "Few, if any, agricultural dealers have...as extensively oiled yards as Brown & Bryant" (Sturgess, 1983). Based on a review of boring logs, asphalt was encountered at locations O, R (Ecology and Environment, Inc., 1990, Appendix H), WA-4, and CA27 (Kennedy/Jenks Consultants, 1992) on the leased property. During my inspection of the site, I confirmed that asphalt covers the leased property. Leary (1997, p.140) states that rainfall ponded on the site, rather than infiltrating, because the site had been oiled. Therefore, infiltration of surface spills, if any, was inhibited because the site surface was covered with oil and asphalt.

2.1.4 Contaminant Distribution and Migration in Groundwater Indicate That Sources on the

Brown & Bryant Property Are Responsible for Observed Groundwater Contamination

Since groundwater monitoring began in 1990, the A-zone groundwater flow direction has been west-northwest, and southwest and south beneath the Brown & Bryant property. Figures 24 through 34 show groundwater elevations for the A-zone from 1991 to 1998. Arrows on the maps show the direction of the hydraulic head gradient, and hence the direction of groundwater flow that transports contaminants in the A-zone. The direction of groundwater flow varies in time and in location at the site. In the northern part of the Brown & Bryant property, groundwater flows mostly to the west, whereas, in the southern part of the property, the flow direction is more to the south or southwest.

2.1.4.1 Historical Flow Directions

It is significant that the available groundwater level data (1990 through 1998) do not reflect the direction of groundwater flow for the period 1960 to 1980 when the majority of the releases occurred from the Brown & Bryant facilities. During this period, the chemical-laden liquids seeped from the unlined sump and pond into the A-zone groundwater. At least from about 1952 to 1968, a water-filled sump apparently from a potato processing facility was also located southwest of the site about 200 feet west of the pond (Figure 2a). This local seepage created a groundwater mound on the water table. Groundwater tends to flow radially outward from a mound, until the flow from the mound merges with the natural westerly and southwesterly regional flow field. The net result is that, during the period of active use of the sump and ponds, contaminants migrated from the sump and pond

toward the leased property with a west-northwest or northwest trajectory. After the sump and pond were lined, the seepage was likely reduced substantially, and the local mounds dissipated essentially to the conditions shown for 1991 through 1998, with groundwater flow from the sump mostly to the west and flow from the pond mostly to the southwest.

However, according to the existing water level data, a subdued groundwater mound still remains in the southeast corner of the Brown & Bryant property, possibly as a result of site drainage and local recharge here. There is also a topographic low area just north of the pond where site runoff collects (for example, Lambert, 1998, pp.72-73) that most likely contributes to water table mounding in this area. Canonie (1988a, p.7) also states that "ponding of surface water has historically occurred in the areas between the excavated pond and the UN-32 tank and the area northwest of the pond." A concrete berm placed by EPA contractors at the fenceline surrounding the entire site also serves to retain surface runoff on-site and to enhance local recharge into the southern part of the Brown & Bryant property. Such recharge explains the flexure in the water table contours and the local divergence of the flow field into westerly and southerly directions. At times, the mound is rather prominent. For example, the A-zone water level maps for April 8, 1991, December 9, 1991, and April 21, 1992, clearly show the rise and recession of a groundwater mound beneath the pond (Figure 35). In fact, the highest water level elevation of any monitor well in December 1991 was at AMW-1P, adjacent to the pond (Figure 26).

In my opinion, the known effect of mounding on groundwater flow direction (as shown in Figure 35)

caused by periodic rainfall runoff would have been greatly compounded by the 20 years of sustained infiltration from the sump and pond. The trajectory of contaminants migrating from the sump and pond would have been more to the northwest toward the leased property prior to 1979.

2.1.4.2 The Distribution of COCs in Groundwater Is Consistent With Sources Present on the Brown & Bryant Property

The distribution of COCs in the A-zone is shown on Figures 36 to 49 for April 1992 and May 1997. The April 1992 data reflect the first date when all existing wells were sampled, and the later date represents the most recent data available to us. One exception is the Dinoseb data for November 1996, which are plotted because so many samples from May 1997 were rejected due to laboratory quality assurance/quality control problems (Ecology and Environment, Inc., 1998).

The chemical plumes in groundwater for the fumigants 1,2-DCP, DBCP, 1,2,3-TCP, and 1,3-DCP reveal two areas of relatively high concentration. In general, the northern part of each plume has a peak concentration that lies generally west and downgradient of the sump. In general, the southern part of each plume has a peak that lies southwest and downgradient of the pond. Some of the plume peaks appear to be detached from the sump and pond source locations because these facilities were lined by about 1980, and therefore seepage from these sources was diminished or halted. Subsequently, the center of mass of the contaminants in the A-zone migrated downgradient with the ambient groundwater flow. The apparent detachment of the center of mass may also be attributable to the sparse monitor well network near the sump and pond.

A primary plume of Dinoseb also emanates from the southeast part of the Brown & Bryant property, with a secondary plume from near the sump. Soil data in the vicinity of the sump do not show elevated Dinoseb concentrations (Figure 19) reaching the water table, although it is possible that insufficient soil samples were obtained or that the available borings were not located where Dinoseb reached the groundwater. Beneath the pond, as a result of the fluid head sustained for long periods, Dinoseb has been detected to greater depths than at the Dinoseb spill area. For example, the 70-foot depth sample collected just above the water table in soil boring DD contained 570 µg/kg of Dinoseb. It is not clear how more Dinoseb would have entered the pond than the sump. One explanation may be that most of the Dinoseb in groundwater is derived from the 1983 surface spill that would have flowed downslope south toward the pond where it infiltrated to groundwater; alternatively, the surface soil contamination at the Dinoseb spill area was transported by surface rainfall runoff toward the pond. In any case, based on groundwater and soil concentrations, the Dinoseb in groundwater appears to be derived primarily from the pond area.

It is also noteworthy that for monitor wells where Dinoseb was detected consistently (such as at EPAS-2 and EPAS-3), the concentrations generally have increased significantly from 1991 to about 1995 and subsequently diminished (Table 2a). Also, near the southern part of the leased property, Dinoseb concentrations have increased approximately 1,700-fold at AP-4 and 7-fold at WA-6. This pulse of Dinoseb contrasts with the fumigants, which have generally remained constant or declined in concentration over

this time. I conclude that Dinoseb was released from the sump and pond and reached groundwater along with the other COCs, but that a high-concentration pulse of Dinoseb was introduced later than the other chemicals, such as at the time of the Dinoseb spill, and that Dinoseb continues to impact groundwater because that spill was not fully remediated.

Differences in the plume size for these chemicals shown in Figures 36 through 49 are also attributed partly to differences in their chemical mobility in groundwater. For example, among the COCs that require remediation, the Dinoseb plume is the smallest, not only because of the relatively late spill, but also because Dinoseb is the least water soluble and one of the most highly sorbed by the sediments (Table 3, where the distribution coefficient is a measure of how strongly a compound sorbs to the soil matrix). By contrast, the largest plumes are for chloroform and 1,2-DCP, the COC with one of the highest solubilities in water and the lowest sorption potential. In fact, 1,2-DCP occurs in all monitor wells in both the A-zone and the B-zone (Tables 2a and 2b), including those upgradient and off-site, such as EPAS-4 and WA-8. Concentrations of 1,2-DCP in these off-site wells indicate that the low levels of 1,2-DCP in the northern part of the leased property (Figure 44) probably represent background concentrations created by the chemical applications to surrounding fields (Domagalski and Dubrovski, 1991).

For all dissolved contaminant plumes, as the contaminants migrate due to moving groundwater, the chemicals also disperse in the groundwater. This hydrodynamic dispersion is caused by two factors: mechanical mixing of the chemical in groundwater at

the pore scale and chemical diffusion due to concentration gradients. Thus, plumes characteristically have high concentrations along the center axis, decreasing concentrations away from the source, and lower concentrations near the edges.

These transport principles can be applied to examine the nature of the chemicals in groundwater beneath the leased property. In all cases, the highest concentration occurs in the southern part of the leased property, between monitor wells WA-6 and WA-7 (Figures 4 and 36 through 49). These wells lie approximately along the trajectory of the plume that is emanating from the sump. Much lower concentrations occur to the north beneath the leased property, as a result of hydrodynamic dispersion transverse to the west-northwesterly, westerly or west-southwesterly groundwater flow directions. I would expect such a distribution of these chemicals in the A-zone groundwater beneath the leased property if the source of chemicals originated only on the Brown & Bryant property, primarily at the sump and pond. Potential sources north of the sump may also have impacted groundwater beneath the leased property (Section 2.1.3). Note also that there are no apparent plumes emanating from the leased property.

2.1.5 Flow and Transport Modeling Supports the Conclusion That the Sump and Pond Were the Primary Sources of Contamination to Groundwater

A flow and transport model was applied to the A-zone groundwater to simulate the migration of 1,2-DCP from the sump and the pond. The MODFLOW code (McDonald and Harbaugh, 1984) was used to simulate groundwater flow, and the MT3D code (S.S.

Papadopulus & Associates, Inc., 1996) was used to simulate transport of contaminants. The model includes the historical effect of groundwater mounding. The results of the simulation show that 1,2-DCP migrates from the vicinity of the sump to beneath the leased property (Figure 50). Thus, the numerical flow and transport simulation supports my interpretation of measured data sets, as discussed above in Section 2.1.4.

2.1.6 EPA's Emergency Response Has Not Been Effective and Has in Fact Caused an Increase in Mobilization of Contaminants to Groundwater

In April of 1991, EPA removed approximately 80 cubic yards of Dinoseb-contaminated soil from the Dinoseb spill area (Martin, 1998, Exhibit 1143). In order to excavate this soil, EPA would have had to remove the existing asphalt at the surface. The excavation was backfilled with clean fill, but was not resurfaced with asphalt. This action, in conjunction with berms that were installed onsite, has created conditions that allow additional infiltration of surface water through contaminated soils. It would have been more prudent for EPA to cap or pave the excavated area after work was complete in order to limit surface infiltration. Instead, the excavation area creates a conduit for surface water flow to enter the subsurface, pass through highly contaminated soils, and enter the A-zone groundwater. Therefore the emergency removal action completed by EPA has actually put the groundwater beneath the site at greater risk by allowing additional infiltration of surface water.

2.1.7 EPA Failed to Consider Natural Attenuation in Its Selection of the Remedial Action

In its selection of the remedy and evaluation of risk posed by the site, EPA has failed to consider natural attenuation processes, the observed limited migration of contaminant plumes, and the large distance downgradient to the nearest Arvin municipal well. A variety of natural attenuation processes are likely occurring that will limit plume migration. The observed data over 7 years of monitoring by EPA clearly show that substantial, sequential migration of the contaminant plumes has not occurred. In addition, the distance to the nearest Arvin municipal well is over 900 feet downgradient from the leading edge of the present plume of contaminants. These factors taken together are important in assessing the actual risk of contaminated groundwater reaching a downgradient receptor.

There is strong evidence that most of the contaminant plumes have been attenuating naturally. As shown by comparing the contaminant plumes in Figures 36 through 49, the area enclosed by an equal concentration line has generally decreased from 1992 to 1997, although in some cases chemical analyses are insufficient to define the downgradient extent of the plume. The Dinoseb plume mass has decreased most markedly in the last few years (Figures 40 and 48).

Mass calculations show that from 1992 to 1997 the dissolved mass in groundwater of Dinoseb has declined by 85%, EDB decreased by 76%, DBCP decreased by 70%, 1,3-DCP decreased by 47%, chloroform decreased by 29%, and 1,2,3-TCP decreased by 27%. Mass reduction of Dinoseb, EDB, DBCP, 1,3-DCP, chloroform, and 1,2,3-TCP is likely occurring due to

naturally occurring degradation mechanisms in the subsurface (e.g., Castro and Belser, 1968; Howard et al., 1991).

The half-life of a chemical represents its rate of natural decay in groundwater (Table 3). The biodegradation process thus acts to consume these contaminant plumes naturally. When the rate of dissolved chemical mass input to the plume equals the rate of mass consumption, the plume appears to stabilize. After the contaminant source is removed, the natural attenuation processes may effectively remediate the dissolved-phase contamination. Thus, eliminating discharge to the sump and pond substantially reduced the primary source of the COCs to allow natural attenuation to occur and the A-zone plumes to diminish.

1,2-DCP apparently is an exception to the tendency for the observed COC plumes to attenuate naturally. Based on literature data in Table 3, I expect 1,2-DCP would degrade over time, but at a rate slower than the other constituents. And, in fact, on the leased property, data at WA-3, WA-6, and WA-7 show substantial reductions in 1,2-DCP from 1992 to 1997; but in some other areas, concentrations increased (Figures 37 and 44). The net effect is that, contrary to expectations, the calculated mass of 1,2-DCP increased 27%. The modest increase is attributable to one or more factors, including the following: (1) scarcity of field sampling locations for accurate plume contouring, (2) continuing drainage or leaching of 1,2-DCP from soil to groundwater near uncharacterized sources, such as at the D-D tank, (3) continuing leaching by infiltration of this relatively mobile chemical (high solubility, low sorption) from soil at known source areas, and (4) the presence of 1,2-DCP as a DNAPL in soil or

groundwater, which serves as a continuing source of dissolved-phase 1,2-DCP in groundwater, even after the pond and sump were lined and discharge to them ceased. For some of these same reasons, the degradation rate of chloroform, and to some extent the other COCs as well, is much slower than expected from literature reports.

At the time the ROD was prepared in 1993, EPA did not have the benefit of the plume behavior described in my report. Nevertheless, EPA did have access to scientific literature that clearly demonstrates that these chemicals are likely to degrade. Over the past few years, based on extensive evaluations of contaminant plumes, EPA has developed a guidance document describing how to determine whether natural attenuation is occurring or will likely occur at a specific site (U.S. EPA, 1997). Inasmuch as this guidance document was published after the ROD was issued, EPA did not have the benefit of this experience, so understandably there was no attempt during EPA's site investigation to collect the requisite field data to consider this remedial option in the feasibility study. In my opinion, if the ROD were issued today, the preferred remedy would likely comprise local source removal or containment (e.g., soil and groundwater near sump, pond, and other source areas) coupled with natural attenuation of the remaining dissolved-phase contamination in the A-zone. Therefore, the cost of remediation would be significantly lower.

2.2 Sampling Data Relied Upon by EPA Do Not Show That Releases of Hazardous Substances on the Surface of the Leased Property Have Communicated with Groundwater Beneath the Leased Property

The basis for this opinion includes my evaluation of the available soil and groundwater data, as well as deposition testimony.

EPA relies primarily upon soil data from borings BB, CC, O, and CA20, and groundwater data from a grab sample taken in boring CA20 on the leased property to conclude that leased property soils are contaminated and that the contamination on the leased property has migrated down to groundwater (Lucey, 1996). The reported presence of Dinoseb in the vicinity of the leased property is an important element in EPA's analysis, but EPA apparently failed to consider all information with respect to the likelihood that Dinoseb in soil on the leased property impacted groundwater. The Dinoseb at shallow depths on the leased property is likely attributed to either windblown transport, spills from the warehouse, surface runoff from drum storage areas north of the warehouse, and vehicle traffic (Figure 22), as discussed in Section 2.1.3. EPA failed to consider these sources in their analysis and that such potential sources are not likely to reach groundwater. Apparently, EPA also did not recognize that after December of 1975 the leased property soil infiltration capacity was lowered by vehicle traffic, surface oiling, and asphalt. Furthermore, of all the COCs, Dinoseb is one of the most easily sorbed to soil and is the most readily biodegradable under favorable conditions (Howard et al., 1991).

For Dinoseb to reach groundwater, I expect in general that Dinoseb must be released in high concentrations for long periods of time. Such conditions did not exist at the leased property. However, all these conditions existed on the Brown & Bryant property where Dinoseb beneath the spill areas and pond is found continuously from the surface to near the water table (Figure 19). By contrast, on the leased property, only low concentrations of Dinoseb (2,000 times lower than the surface soil remediation goal of 80,000 µg/kg) were found at borings BB and CC at the 50-foot depth, about 20 feet above the present water table (Figure 19). These deep detections of Dinoseb at borings BB and CC could not be replicated in carefully sampled borings (S16A and S19A) placed at the same locations (Kennedy/Jenks Consultants, 1992). Also, no Dinoseb was detected in nearby borings CA-16 and CA-19 (Figure 19). Therefore, Dinoseb on the leased property is likely limited only to the upper few feet of soil, and the deeper detections in borings BB and CC are attributable to cross contamination during drilling or laboratory errors.

I also note that Dinoseb inexplicably is reported in the off-site background boring G in three of four samples within 15 feet of land surface and then at 45 feet bgs where the concentration was 1,100 µg/kg (Appendix C). The off-site Dinoseb concentration is at least ten times greater than on the leased property, except for the 5-foot sample in boring BB. In the absence of a Dinoseb release reported in the vicinity of the background sample location, and given the high sorption and biodegradation potential of Dinoseb, I believe the data at boring G reveal either poor sampling procedure (i.e., cross contamination) or laboratory analytical errors.

The Dinoseb soil data on the leased property follow a similar pattern of irregular detection with depth and may also be unrepresentative.

Problems with Dinoseb cross contamination were specifically discussed in the minutes from a January 4, 1990 meeting between EPA and Ecology and Environment, Inc. (Woody, 1998, Exhibit 4). The memo states that "During the removal investigation, the auger would hit a pocket of dinoseb and dinoseb would 'puff up' and spread over everything. Quality Control was difficult. Samples with trace amount [sic] of contamination (especially the deeper ones) may have been contaminated at the surface." Regarding Dinoseb results from the "Northwest Corner" (the leased property), "The pervasive and erratic dinoseb findings are hard to explain. Woody said dinoseb was found all over the site, i.e., greenish powder was found on the concrete pad before work began. There was [sic] quality control problems because dinoseb would readily disperse into the air then stick on equipment or whatever." During his deposition, Woody (1998, p.62) stated that "Dinoseb is a very fine powder, it is like talcum powder, and when it is dry and you drill into it, just like talcum powder, a big puffy emission, and it would go everywhere. We tried to control it as best we could...You would see that stuff in the action of the screws, of a Phillip screw, I mean it just got everywhere..."

Several other COCs have been detected in other background borings as well. For example, soil from CA09, east of the Brown & Bryant property (Figure 21), contained 1,2-DCP at 90 µg/kg at a depth of 48 feet bgs and 50 µg/kg at a depth of 65 feet bgs. Soil from boring CB05, approximately 450 feet southwest of the

Brown & Bryant property, contained 50 µg/kg of 1,2-DCP at a depth of 84 feet bgs and 60 µg/kg at 98 feet bgs. These detections seem to indicate either that background concentrations of COCs are high, that cross contamination was occurring during sampling, or that problems were occurring with the laboratory analytical methodology, or some combination thereof.

Mr. Lucey of EPA claims that groundwater containing Dinoseb bailed from boring CA-20 (129 micrograms per liter [µg/L]) is derived from releases that migrated through soil at borings BB and CC, in spite of the absence of Dinoseb in confirmatory soil borings S-16A and S-19A and adjacent borings CA-16 and CA-19. In addition, a groundwater grab sample collected at CA-16, close to BB, did not detect Dinoseb. A groundwater grab sample collected at CA-19, close to CC, detected Dinoseb at only 1.9 µg/L; the federal maximum contaminant level (MCL) for Dinoseb is 7 µg/L. Moreover, EPA uncharacteristically relied upon grab samples of groundwater collected by bailing water from a temporary driven well point, such as CA-20, rather than properly constructed, developed, and sampled monitor wells. This practice is contrary to EPA guidance, which consistently emphasizes the use of standard sampling techniques to collect representative groundwater samples from properly constructed monitor wells (U.S. EPA, 1987a, pp.4-18; U.S. EPA, 1992, pp.7-12; U.S. EPA, 1995). To this point, monitor well WA-3, located about 20 feet from CA-20, did not detect Dinoseb above the MCL of 7 µg/L in eight sampling events from April 1992 to May 1997, although one sample contained 2 µg/L in December 1992. The Dinoseb in the A-zone grab sample at CA-20, if it is representative, is more likely

derived from a source on the Brown & Bryant property that migrated through groundwater to the leased property for these reasons: (1) the overlying soil samples in CA-20 do not contain Dinoseb, (2) there is no Dinoseb in adjacent borings Q and O, (3) CA-20 was historically downgradient of the Brown & Bryant sources, and (4) much greater Dinoseb concentrations occur upgradient on the Brown & Bryant property at WA-6 and AMW-2P (Figure 40).

The pattern of 1,2-DCP in soil at CA-20 supports my opinion that chemicals in soil there did not reach groundwater (Figure 15). 1,2-DCP was detected in five soil samples within 45 feet of land surface at boring CA-20. Six samples were collected in the underlying 20-foot interval of the vadose-zone soil, and 1,2-DCP was not detected in any of these samples. Additionally, a core sample of the A-zone collected about 2 feet below the water table also failed to show 1,2-DCP. However, the core from about 5 feet below the water table did show this chemical at 350 µg/kg (Appendix C). Groundwater in the A-zone generally flows horizontally to the west here, but it also has a downward flow component. I interpret the soil data at CA-20 to indicate that 1,2-DCP in groundwater on the leased property originated upgradient on the Brown & Bryant property near the sump where the underlying soils and groundwater contain 1,2-DCP at high concentrations or beneath the unsampled D-D tank area, rather than originating from the minor surface releases on the leased property. Moreover, there is no 1,2-DCP in borings BB and CC or nearby; thus, the 1,2-DCP in CA-20 groundwater, as well as the Dinoseb, could not come from the vicinity of borings BB and CC, as alleged by EPA.

The 1,2,3-TCP detected in boring O is not a reliable indicator of releases on the leased property that impacted groundwater. Boring O contained 1,2,3-TCP from about 20 to 55 feet bgs, the total depth. Except for DBCP, 1,2,3-TCP was the only fumigant detected in this boring. Within this depth interval, 1,2,3-TCP reached a peak soil concentration of 50 µg/kg at 35 feet, and the concentration diminished to 7.5 µg/kg at the base of the boring. It is possible that in deeper soil samples the 1,2,3-TCP concentration would have decreased even further, showing that 1,2,3-TCP did not reach the groundwater. Such is the case for DBCP, which is at a maximum of 22 µg/kg at 35 feet bgs and decreases to nondetectable at 55 feet bgs. 1,2,3-TCP is a known byproduct of the manufacturing of 1,2-DCP and usually occurs along with the fumigants 1,2-DCP and 1,3-DCP (NIH, 1998); however, this location is an exception. I know of no separate source for or releases of only 1,2,3-TCP. There is no evidence of a local source of 1,2,3-TCP in the deposition testimony nor is there a hot spot of 1,2,3-TCP in the groundwater here (Figures 36 and 43, Table 2a). In addition, there was a reported problem with the field laboratory instrument calibration that occurred during the period when the samples from boring O were analyzed (Yerian, 1998, pp.100-104). If the 1,2,3-TCP is actually present in soil at this location, the very low concentrations and the pattern of occurrence in soil indicate this chemical did not impact groundwater to an extent that would require remediation.

1,3-DCP is a fingerprint or tracer of the path of fumigants in groundwater released from Brown & Bryant. I found no evidence of 1,3-DCP anywhere in soil above the water table on the leased property.

Nevertheless, 1,3-DCP occurs in the A-zone groundwater on the leased property (WA-3, November 1995, Table 2a), as well as in soils beneath the Brown & Bryant property. For example in borings I, DD, and CA24 concentrations range from 5.7 to 1180 µg/kg in the interval of soil above the water table, between 50 to 70 feet bgs (Figure 16). The spatial distribution of 1,3-DCP in groundwater is similar to that for the other chemicals in groundwater beneath the leased property, in that concentrations decrease from east to west and from south to north. Inasmuch as historically, and to a lesser extent today, the trajectory of contaminants migrating from the sump area passes across the southern part of the leased property, the 1,3-DCP is likely derived from the Brown & Bryant sources.

If sources of groundwater contamination beneath the leased property were attributable to migration of contaminants through the overlying vadose zone, I would expect one or more areas of elevated concentration or hot spots in the groundwater plumes beneath or downgradient of the leased property. Such is not the case in any of the plumes I have examined.

The data relied upon by EPA are insufficient to conclude that groundwater was impacted from surface releases on the leased property. John Lucey admitted that "What I was trying to say occurred is that based on the data that we have, the closest soil contamination that we know of in the vadose zone is located at Boring O and detected at CA-20" (Lucey, 1998, p.177). Mr. Lucey also alludes to other sources that may not have been characterized: "Well, there could be areas that weren't sampled nearby that were potential sources, possibly as you hypothesize there, where Boring O is located could have been the source, and it could have

migrated down to the surface and then was picked up at CA-20. I mean, that's one scenario, it could have been infinite possibilities of where that source could be" (Lucey, 1998, p.177). Even though substantial areas upgradient from the leased property were not properly characterized (Figures 12 through 15), Mr. Lucey inexplicably concluded that contamination in groundwater on the leased property resulted from activities on the leased property: "I can only recall my recollection at the time when this was written [Lucey's 1996 memo detailing his rationale for concluding that groundwater beneath the leased property had been impacted by spills on the leased property] and, mainly, I think it was based on the fact that based on the groundwater gradient, that there were no known sources for that contamination in the up-gradient direction, based on the data that we have there" (Lucey, 1998, p.178). When all the data are considered, it is my opinion that groundwater contamination that requires remediation on the leased property is derived from the sources on the Brown & Bryant property.

2.3 The Reported Releases of Hazardous Substances at the Leased Property Did Not Trigger Response Costs, and Will Not Trigger Any Costs in the Future

Based on a review of depositional testimony and available field data, I find no evidence of any large spills, continuous small spills, or significant disposal that might have occurred on the leased property. Deposition testimony presented previously indicates that at most only some minor leakage from fittings on tanks stored on the leased property had occurred (Merryman, 1997, pp.63-64).

2.3.1 *Spill Modeling Shows That a Very Large Release on the Leased Property Would Have Been Required to Impact Groundwater*

Simulations were performed which indicate that a very large spill of D-D (1,2-DCP) on the leased property would be required in order to impact groundwater beneath the leased property to levels requiring remediation (i.e., ten times the MCL for 1,2-DCP, or 50 µg/L [U.S. EPA, 1993a, p.12]). Although the leased property is paved with asphalt (Figure 51), the asphalt may have been cracked or degraded, and 1,2-DCP is also known to act as a solvent to asphalt. Therefore, I considered two bounding cases for a hypothetical spill that occurred during the warm summer months: (1) a worst-case scenario where the spill occurs on bare dirt, and (2) a best-case scenario where the spill occurs on competent, non-degraded asphalt. The actually field case likely falls between these two cases. For a surface spill, I considered:

- The expected area (radius) of the spill on the ground (based on a brief series of field experiments during which various volumes of water were spilled onto asphalt and soil surfaces similar to those present on the leased property)
- The rate of evaporation of the spill on a warm summer day
- The rate of infiltration to soil or asphalt of the remaining portion of the spill after considering mass lost to evaporation

To quantify these processes, an evaporation-infiltration model was linked to the vadose-zone flow and transport code T2VOC (Falta et al., 1992). The model presented by EPA (1987b) was used to simulate evaporative

losses from a surface spill considering average summer temperature and wind speed at the site. The model of Reible et al. (1990) was then used to estimate infiltration of the spill. The rate of evaporation to the atmosphere was compared with the rate of infiltration into the soil in order to estimate the mass that would be expected to infiltrate into the soil. The mass that was expected to infiltrate was then input into the vadose-zone flow and transport code T2VOC and allowed to redistribute into the subsurface. The contaminant mass flux rate from the lower portion of the vadose zone just above the water table was then used as input to a mixing-cell calculation in order to estimate groundwater concentrations in the saturated zone.

T2VOC uses the integral finite-difference method to solve for flow and transport within a multiphase system with three components: air, water, and a volatile, water-soluble organic chemical. The code considers transfer of contaminant mass between nonaqueous-phase liquid (NAPL), dissolved, vapor, and sorbed phases.

For the vadose-zone flow and transport simulations, a number of mechanisms of contaminant movement into and through the vadose zone were considered:

- Introduction of contamination into the vadose zone in both dissolved and pure (NAPL) phases
- Movement of NAPL laterally through the vadose zone
- Movement of dissolved-phase contamination through soil moisture in the vadose zone
- Dissolution of NAPL into soil moisture
- Sorption of contaminants to soil particles

- Movement of volatile contaminants through the air-filled soil pores in the vapor phase

The stratigraphy of the vadose zone has been conceptualized by dividing it into three layers of different soil types. The properties of the different soils are average values based on measured laboratory values reported in DBS&A (1992).

For the worst-case scenario where a spill of pure 1,2-DCP occurs on bare soil, results of the simulations indicate that about 500 gallons (one-tenth of a tanker truck) would have to have been spilled on the ground surface in order to cause groundwater concentrations of 1,2-DCP in the saturated zone in excess of the ROD-stipulated cleanup levels. For the scenario where the asphalt is new and not degraded, simulation results indicate that a spill of more than 1,000 gallons (one-fifth of a tanker truck) of 1,2-DCP would have had to occur in order to impact groundwater concentrations to levels that exceeded 50 µg/L. No reported releases anywhere near the magnitude of these releases have occurred on the leased property. And, there is no localized plume of elevated 1,2-DCP in groundwater beneath the leased property (see Section 2.1.4.2).

These calculations are conservative in that I have assumed a spill of pure 1,2-DCP. In actuality, however, D-D contains a variety of other chlorinated hydrocarbons in addition to 1,2-DCP. The assumption of a pure 1,2-DCP spill would then overestimate the mass of 1,2-DCP introduced into the subsurface. Thus, the simulation results indicate that the likelihood that a surface spill on the leased property impacted groundwater to actionable levels is negligible.

I am continuing to perform additional simulations to study the effects of surface spills of other COCs.

2.3.2 Existing Chemicals in Soil Will Not Impact Groundwater in the Future

On the leased property, the present concentrations of 1,2-DCP in soil are so low that if this soil contamination leached to the A-zone in the future, the concentrations would be far below regulatory standards. Thus, in the absence of contamination emanating from the Brown & Bryant property, no remedial action would be necessary. I performed a simple calculation to illustrate this point. The calculation proceeded as follows:

1. The highest 1,2-DCP concentration in soil above the water table on the leased property was selected (80 µg/kg at a depth of 10 feet bgs in boring CA20).
2. The pore-water concentration that would be in equilibrium with that soil concentration was calculated.
3. Given the recharge rate at the site (about 1 percent of annual precipitation), a mass flux of 1,2-DCP through the vadose zone and into the water table was calculated as the pore-water concentration multiplied by the recharge rate.
4. The calculated vadose-zone mass flux rate was then input into a simple mixing model that considered the effect of dilution of incoming vadose-zone pore water by groundwater flow in the A-zone aquifer, which did not contain 1,2-DCP initially.

The results of this calculation indicated that the concentration in the groundwater below a column of soil contaminated with 80 µg/kg of 1,2-DCP would be approximately 100 times lower than the MCL for 1,2-

DCP in groundwater. Thus, I conclude that the existing concentrations of 1,2-DCP in soil on the leased property are too low to cause any future impact to groundwater that would require remediation.

Table 1. Constituents of Selected Products Handled at the Brown & Bryant Facility

Trade Name	Manufac-turer	COCs	Notes[c]
D-D	Shell	1,2-DCP; 1,3-DCP[a], 1,2,3-TCP[b]	Banned in 1984
Dowfume (various types)	Dow	EDB	Banned in 1983
Dinitro weed killer	Dow	Dinoseb	Banned in California in 1986
Fumazone	Dow	DBCP	Banned in 1979
Nemagon (various types)	Shell	DBCP	Banned in 1979
Premerge	Dow	Dinoseb	Banned in California in 1986
Selective weed killer	Dow	Dinoseb	Banned in California in 1986
Vidden D	Dow	1,2-DCP, 1,3-DCP[a], 1,2,3-TCP[b]	Banned in 1984

a Not specifically listed in ingredients, but is a known isomer of 1,2-DCP, and is found widely in site soils and groundwater.

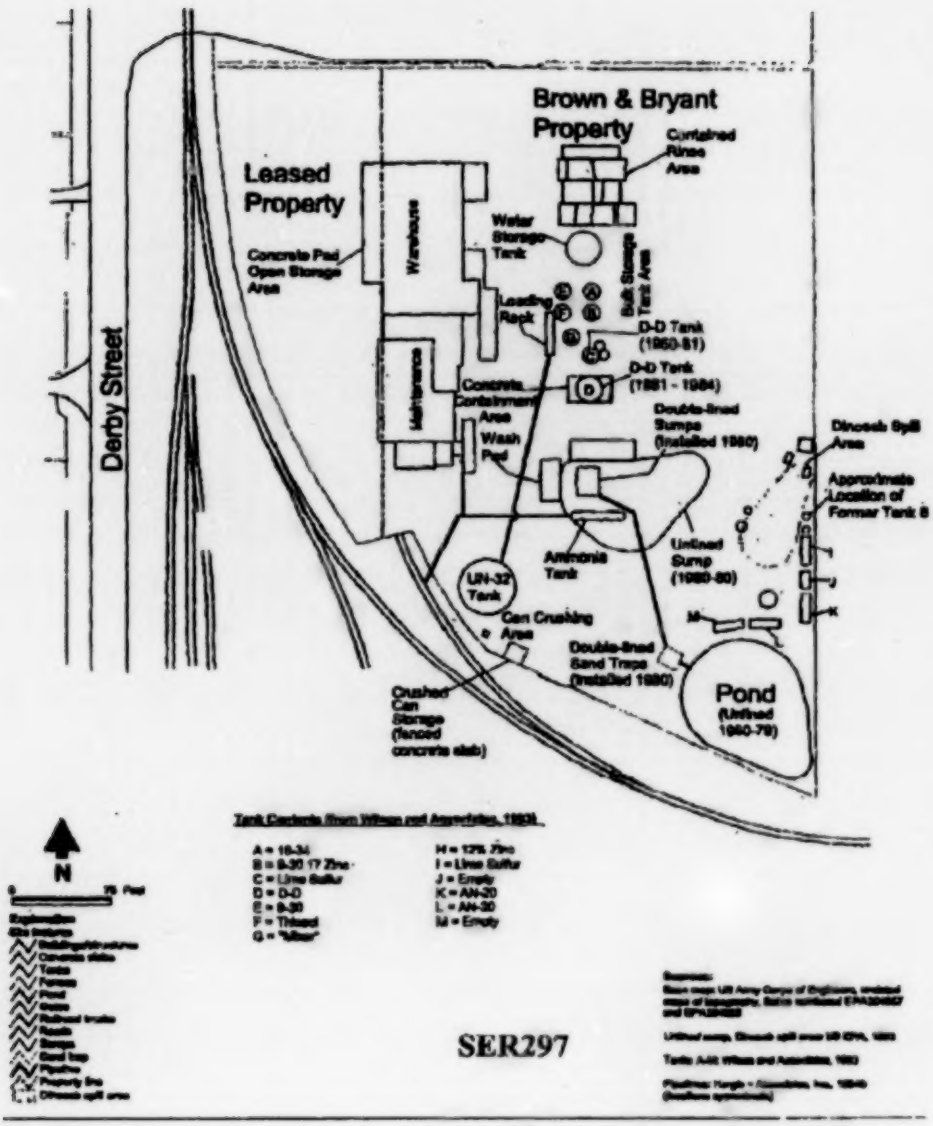
b Not specifically listed in ingredients, but is a known manufacturing byproduct of 1,2-DCP, and is found widely in site soils and groundwater.

c Banning dates from Domagalski and Dubrovski (1991).

1,2-DCP = 1,2-dichloropropane
1,3-DCP = 1,3-dichloropropane
1,2,3-TCP = 1,2,3-trichloropropane
EDB = Ethylene dibromide
DBCP = Dibromochloropropane
Dinoseb = 2-sec-butyl-4,6-dinitrophenol

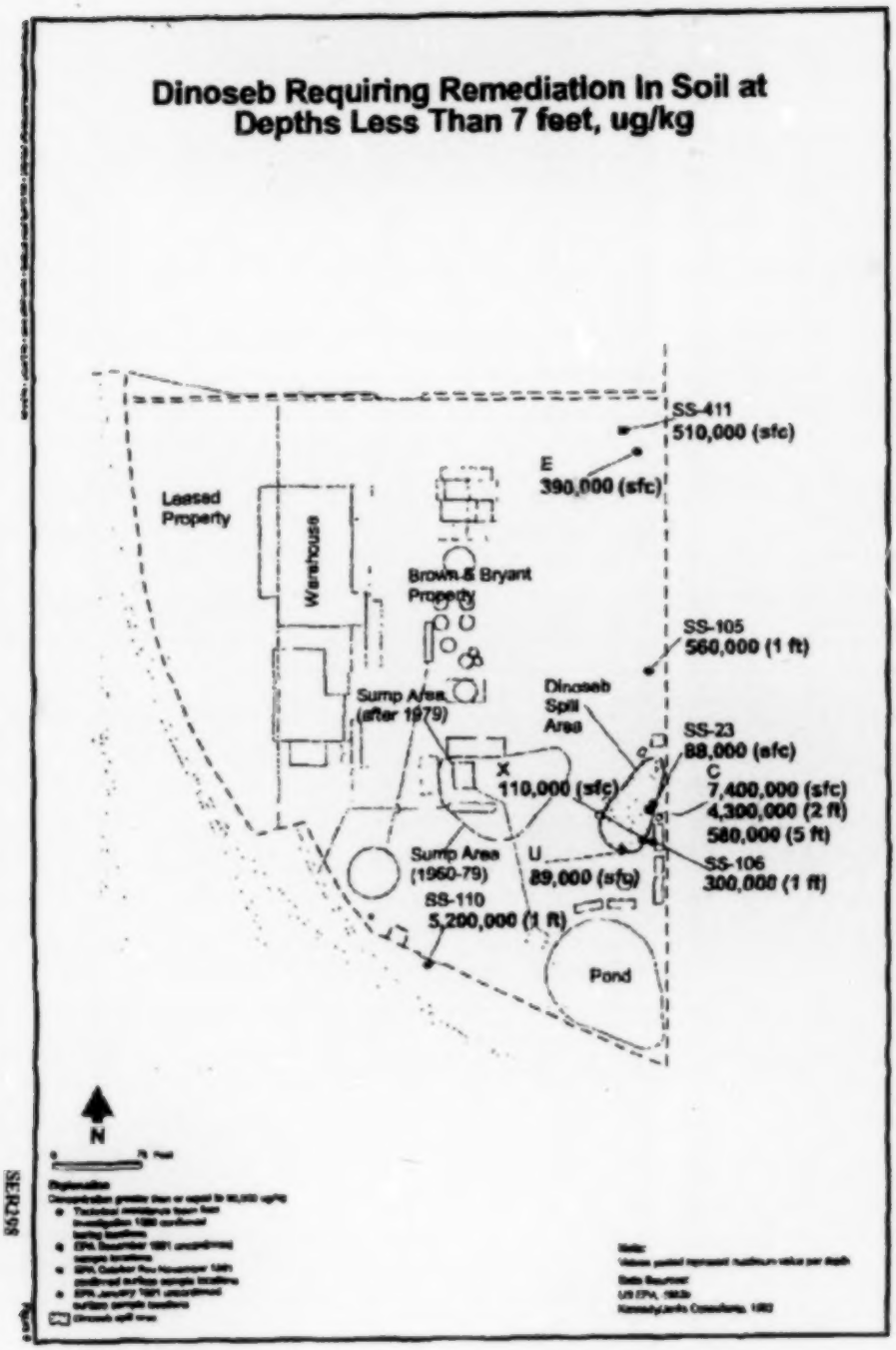
JA-410

[Site Map]



SER297

[Map – Dinoseb Soil Remediation]



[Trial Exhibit 63]

SUMMARY OF SHELL D-D® INVOICES

Of the 213 invoices for D-D® in evidence:

- 157 have no allowance
- 56 have some sort of allowance; of those:
  - Only 10 have an "evaporation allowance"
  - 19 have a "fall fumigation allowance"
  - 9 have a "promotional allowance"
  - 9 have a "promotional allowance and temp compet all"
- 5 have a "temp compet all"
- 4 have a "comp allowance"

Trial Ex. #	Description	Type of Allowance
1152	Shell Invoice Grouped With Photocopy of Purchase Order No. 3077, eight pages	NONE
1154	Shell Invoice Grouped With Photocopy of Purchase Order No. 3093, six pages	NONE
1155	Shell Invoice Grouped With Photocopy of Purchase Order No. 3108, six pages	NONE
1156	Shell Invoice Grouped With Photocopy of Purchase Order No. 3147, six pages	NONE
1157	Shell Invoice Grouped With Photocopy of Purchase Order No. 3188, five pages	NONE
1158	Shell Invoice Grouped With Photocopy of Purchase Order No. 3231, five pages	NONE
1159	Shell Invoice Grouped With Photocopy of Purchase Order No. 3232, seven pages	NONE
1160	Shell Invoice Grouped With Photocopy of Purchase Order No. 3514, eight pages	NONE

Trial Ex. #	Description	Type of Allowance
1161	Shell Invoice Grouped With Photocopy of Purchase Order No. 3531, six pages	NONE
1162	Shell Invoice Grouped With Photocopy of Purchase Order No. 3532, six pages	NONE
1163	Shell Invoice Grouped With Photocopy of Purchase Order No. 3533, seven pages	NONE
1164	Shell Invoice Grouped With Photocopy of Purchase Order No. 3556, seven pages	NONE
1165	Shell Invoice Grouped With Photocopy of Purchase Order No. 3238, six pages	NONE
1166	Shell Invoice Grouped With Photocopy of Purchase Order No. 3241, six pages	NONE
1167	Shell Invoice Grouped With Photocopy of Purchase Order No. 3592, six pages	NONE
1168	Shell Invoice Grouped With Photocopy of Purchase Order No. 3596, six pages	NONE

Trial Ex. #	Description	Type of Allowance
1169	Shell Invoice Grouped With Photocopy of Purchase Order No. 3242, six pages	NONE
1170	Shell Invoice Grouped With Photocopy of Purchase Order No. 3626, six pages	NONE
1171	Shell Invoice Grouped With Photocopy of Purchase Order No. 3663, seven pages	NONE
1172	Shell Invoice Grouped With Photocopy of Purchase Order No. 3666	NONE
1173	Shell Invoice Grouped With Photocopy of Purchase Order No. 3679, six pages	NONE
1174	Shell Invoice Grouped With Photocopy of Purchase Order No. 3753, six pages	NONE
1175	Photocopy of Purchase Order No. 2725, one page	NONE
1176	Photocopy of Purchase Order No. 2726, one page	NONE
1177	Shell Invoice Grouped With Photocopy of Purchase Order No. 2748, six pages	NONE

Trial Ex. #	Description	Type of Allowance
1178	Shell Invoice Grouped With Photocopy of Purchase Order No. 2778, six pages	NONE
1179	Shell Invoice Grouped With Photocopy of Purchase Order No. 2779, six pages	NONE
1180	Shell Invoice Grouped With Photocopy of Purchase Order No. 2798, five pages	NONE
1181	Shell Invoice Grouped With Photocopy of Purchase Order No. 2799, six pages	NONE
1182	Shell Invoice Grouped With Photocopy of Purchase Order No. 2800, six pages	NONE
1183	Shell Invoice Grouped With Photocopy of Purchase Order No. 2801, six pages	NONE
1184	Shell Invoice Grouped With Photocopy of Purchase Order No. 2811, six pages	NONE
1185	Shell Invoice Grouped With Photocopy of Purchase Order No. 2812, seven pages	NONE

Trial Ex. #	Description	Type of Allowance
1186	Shell Invoice Grouped With Photocopy of Purchase Order No. 2898, six pages	NONE
1187	Shell Invoice Grouped With Photocopy of Purchase Order No. 2899, seven pages	NONE
1188	Shell Invoice Grouped With Photocopy of Purchase Order No. 2900, six pages	NONE
1189	Shell Invoice Grouped With Photocopy of Purchase Order No. 2912, nine pages	NONE
1190	Shell Invoice Grouped With Photocopy of Purchase Order No. 3006, seven pages	NONE
1191	Shell Invoice Grouped With Photocopy of Purchase Order No. 3088, six pages	NONE
1192	Shell Invoice Grouped With Photocopy of Purchase Order No. 3133, seven pages	NONE
1239	Shell Invoice Grouped With Photocopy of Purchase Order No. 7190, three pages	NONE

Trial Ex. #	Description	Type of Allowance
1193	Shell Invoice Grouped With Photocopy of Purchase Order No. 3752, six pages	NONE
1194	Shell Invoice Grouped With Photocopy of Purchase Order No. 3753, six pages	NONE
1195	Shell Invoice Grouped With Photocopy of Purchase Order No. 3979, six pages	NONE
1196	Shell Invoice Grouped With Photocopy of Purchase Order No. 4108, seven pages	NONE
1197	Shell Invoice Grouped With Photocopy of Purchase Order No. 4186, seven pages	NONE
1198	Shell Invoice Grouped With Photocopy of Purchase Order No. 4187, six pages	NONE
1199	Shell Invoice Grouped With Photocopy of Purchase Order No. 4197, seven pages	NONE
1200	Shell Invoice Grouped With Photocopy of Purchase Order No. 4216, three pages	NONE

Trial Ex. #	Description	Type of Allowance
1201	Shell Invoice Grouped With Photocopy of Purchase Order No. 4231, seven pages	NONE
1202	Shell Invoice Grouped With Photocopy of Purchase Order No. 4287, seven pages	NONE
1203	Photocopy of Purchase Order No. 4304, one page	NONE
1205	Shell Invoice Grouped With Photocopy of Purchase Order No. 4408, six pages	NONE
1204	Shell Invoice Grouped With Photocopy of Purchase Order No. 4398, seven pages	NONE
1206	Shell Invoice Grouped With Photocopy of Purchase Order No. 4570, four pages	NONE
1207	Shell Invoice Grouped With Photocopy of Purchase Order No. 5109, five pages	NONE
1208	Shell Invoice Grouped With Photocopy of Purchase Order No. 5140, seven pages	NONE

Trial Ex. #	Description	Type of Allowance
1209	Shell Invoice Grouped With Photocopy of Purchase Order No. 5161, six pages	NONE
1210	Shell Invoice Grouped With Photocopy of Purchase Order No. 5222, six pages	NONE
1211	Shell Invoice Grouped With Photocopy of Purchase Order No. 5223, six pages	NONE
1212	Shell Invoice Grouped With Photocopy of Purchase Order No. 5224, six pages	NONE
1216	Shell Invoice Grouped With Photocopy of Purchase Order No. 6452, six pages	LESS EVAPORATION ALLOWANCE
1217	Shell Invoice Grouped With Photocopy of Purchase Order No. 6453, six pages	LESS EVAPORATION ALLOWANCE
1213	Shell Invoice Grouped With Photocopy of Purchase Order No. 6427, six pages	NONE
1214	Shell Invoice Grouped With Photocopy of Purchase Order No. 6437, five pages	NONE

Trial Ex. #	Description	Type of Allowance
1215	Shell Invoice Grouped With Photocopy of Purchase Order No. 6438, six pages	NONE
1218	Shell Invoice Grouped With Photocopy of Purchase Order No. 6505, six pages	LESS EVAPORATION ALLOWANCE
1219	Shell Invoice Grouped With Photocopy of Purchase Order No. 6506, six pages	LESS EVAPORATION ALLOWANCE
1220	Shell Invoice Grouped With Photocopy of Purchase Order No. 6507, seven pages	LESS EVAPORATION ALLOWANCE
1221	Shell Invoice Grouped With Photocopy of Purchase Order No. 6508, six pages	LESS EVAPORATION ALLOWANCE
1222	Shell Invoice Grouped With Photocopy of Purchase Order No. 6509, seven pages	LESS EVAPORATION ALLOWANCE
1223	Shell Invoice Grouped With Photocopy of Purchase Order No. 6510, six pages	LESS EVAPORATION ALLOWANCE
1224	Shell Invoice Grouped With Photocopy of Purchase Order No. 6511, six pages	LESS EVAPORATION ALLOWANCE

Trial Ex. #	Description	Type of Allowance
1225	Shell Invoice Grouped With Photocopy of Purchase Order No. 6512, six pages	LESS EVAPORATION ALLOWANCE
1227	Shell Invoice Grouped With Photocopy of Purchase Order No. 6759, six pages	LESS FALL FUMIGATION PROMOTIONAL ALLOWANCE
1230	Shell Invoice Grouped With Photocopy of Purchase Order No. 6762, five pages	LESS FALL FUMIGATION PROMOTIONAL ALLOWANCE
1231	Shell Invoice Grouped With Photocopy of Purchase Order No. 6763, four pages	LESS FALL FUMIGATION PROMOTIONAL ALLOWANCE
1228	Shell Invoice Grouped With Photocopy of Purchase Order No. 6760, six pages	LESS FALL FUMIGATION PROMOTIONAL ALLOWANCE
1229	Shell Invoice Grouped With Photocopy of Purchase Order No. 6761, six pages	LESS FALL FUMIGATION PROMOTIONAL ALLOWANCE
1232	Shell Invoice Grouped With Photocopy of Purchase Order No. 6764, five pages	LESS FALL FUMIGATION PROMOTIONAL ALLOWANCE
1233	Shell Invoice Grouped With Photocopy of Purchase Order No. 6765, five pages	LESS FALL FUMIGATION PROMOTIONAL ALLOWANCE

Trial Ex. #	Description	Type of Allowance
1234	Shell Invoice Grouped With Photocopy of Purchase Order No. 6766, six pages	LESS FALL FUMIGATION PROMOTIONAL ALLOWANCE
1235	Shell Invoice Grouped With Photocopy of Purchase Order No. 7081, two pages	NONE
1236	Shell Invoice Grouped With Photocopy of Purchase Order No. 7082, five pages	NONE
1237	Shell Invoice Grouped With Photocopy of Purchase Order No. 7083, five pages	NONE
1240	Shell Invoice Grouped With Photocopy of Purchase Order No. 7191, six pages	NONE
1241	Shell Invoice Grouped With Photocopy of Purchase Order No. 7192, seven pages	NONE
1238	Photocopy of Purchase Order No. 7287, one page	NONE
1242	Shell Invoice Grouped With Photocopy of Purchase Order No. 7287, six pages	NONE

Trial Ex. #	Description	Type of Allowance
1243	Shell Invoice Grouped With Photocopy of Purchase Order No. 7291, six pages	NONE
1244	Shell Invoice Grouped With Photocopy of Purchase Order No. 2105, five pages	NONE
1245	Shell Invoice Grouped With Photocopy of Purchase Order No. 2106, five pages	NONE
1247	Shell Invoice Grouped With Photocopy of Purchase Order No. 2131, six pages	NONE
1246	Shell Invoice Grouped With Photocopy of Purchase Order No. 2130, seven pages	NONE
1248	Shell Invoice Grouped With Photocopy of Purchase Order No. 2148, six pages	NONE
1249	Shell Invoice Grouped With Photocopy of Purchase Order No. 2183, five pages	LESS FALL FUMIGATION PROMOTIONAL ALLOWANCE
1250	Shell Invoice Grouped With Photocopy of Purchase Order No. 2184, five pages	LESS FALL FUMIGATION PROMOTIONAL ALLOWANCE

Trial Ex. #	Description	Type of Allowance
1251	Shell Invoice Grouped With Photocopy of Purchase Order No. 2185, five pages	LESS FALL FUMIGATION PROMOTIONAL ALLOWANCE
1252	Shell Invoice Grouped With Photocopy of Purchase Order No. 2254, six pages	LESS FALL FUMIGATION PROMOTIONAL ALLOWANCE
1253	Shell Invoice Grouped With Photocopy of Purchase Order No. 2255, six pages	LESS FALL FUMIGATION PROMOTIONAL ALLOWANCE
1254	Shell Invoice Grouped With Photocopy of Purchase Order No. 2259, five pages	LESS FALL FUMIGATION PROMOTIONAL ALLOWANCE
1255	Shell Invoice Grouped With Photocopy of Purchase Order No. 2286, six pages	LESS FALL FUMIGATION PROMOTIONAL ALLOWANCE
1257	Shell Invoice Grouped With Photocopy of Purchase Order No. 2288, six pages	LESS FALL FUMIGATION PROMOTIONAL ALLOWANCE
1256	Shell Invoice Grouped With Photocopy of Purchase Order No. 2287, five pages	LESS FALL FUMIGATION PROMOTIONAL ALLOWANCE
1258	Shell Invoice Grouped With Photocopy of Purchase Order No. 2299, six pages	LESS FALL FUMIGATION PROMOTIONAL ALLOWANCE

Trial Ex. #	Description	Type of Allowance
1259	Shell Invoice Grouped With Photocopy of Purchase Order No. 2300, five pages	LESS FALL FUMIGATION PROMOTIONAL ALLOWANCE
1260	Shell Invoice Grouped With Photocopy of Purchase Order No. 2330, six pages	LESS PROMOTIONAL ALLOWANCE
1261	Shell Invoice Grouped With Photocopy of Purchase Order No. 2331, six pages	LESS PROMOTIONAL ALLOWANCE
1262	Shell Invoice Grouped With Photocopy of Purchase Order No. 2332, six pages	LESS PROMOTIONAL ALLOWANCE
1263	Shell Invoice Grouped With Photocopy of Purchase Order No. 2338, six pages	LESS PROMOTIONAL ALLOWANCE
1264	Shell Invoice Grouped With Photocopy of Purchase Order No. 2348, seven pages	LESS PROMOTIONAL ALLOWANCE
1265	Shell Invoice Grouped With Photocopy of Purchase Order No. 2347, six pages	LESS PROMOTIONAL ALLOWANCE
1266	Shell Invoice Grouped With Photocopy of Purchase Order No. 2375, six pages	LESS PROMOTIONAL ALLOWANCE

Trial Ex. #	Description	Type of Allowance
1267	Shell Invoice Grouped With Photocopy of Purchase Order No. 2376, six pages	LESS PROMOTIONAL ALLOWANCE
1268	Shell Invoice Grouped With Photocopy of Purchase Order No. 2409, seven pages	LESS PROMOTIONAL ALLOWANCE
1271	Shell Invoice Grouped With Photocopy of Purchase Order No. 10153, five pages	LESS COMP ALLOWANCE
1272	Shell Invoice Grouped With Photocopy of Purchase Order No. 10154, six pages	LESS COMP ALLOWANCE
1269	Shell Invoice Grouped With Photocopy of Purchase Order No. 10176, six pages	LESS COMP ALLOWANCE
1270	Shell Invoice Grouped With Photocopy of Purchase Order No. 10178, six pages	LESS COMP ALLOWANCE
1273	Shell Invoice Grouped With Photocopy of Purchase Order No. 9221, seven pages	NONE
1274	Shell Invoice Grouped With Photocopy of Purchase Order No. 10214, eight pages	NONE

Trial Ex. #	Description	Type of Allowance
1275	Shell Invoice Grouped With Photocopy of Purchase Order No. 10280, five pages	LESS PROMOTIONAL ALLOWANCE/ LESS TEMP COMPET ALL
1276	Shell Invoice Grouped With Photocopy of Purchase Order No. 10335, six pages	LESS PROMOTIONAL ALLOWANCE/ LESS TEMP COMPET ALL
1277	Shell Invoice Grouped With Photocopy of Purchase Order No. 10353, six pages	LESS PROMOTIONAL ALLOWANCE/ LESS TEMP COMPET ALL
1278	Shell Invoice Grouped With Photocopy of Purchase Order No. 10360, five pages	LESS PROMOTIONAL ALLOWANCE/ LESS TEMP COMPET ALL
1279	Shell Invoice Grouped With Photocopy of Purchase Order No. 10373, six ages	LESS PROMOTIONAL ALLOWANCE/ LESS TEMP COMPET ALL
1280	Shell Invoice Grouped With Photocopy of Purchase Order No. 10374, six pages	LESS PROMOTIONAL ALLOWANCE/ LESS TEMP COMPET ALL

Trial Ex. #	Description	Type of Allowance
1281	Shell Invoice Grouped With Photocopy of Purchase Order No. 10379, six pages	LESS PROMOTIONAL ALLOWANCE/ LESS TEMP COMPET ALL
1282	Shell Invoice Grouped With Photocopy of Purchase Order No. 10380, seven pages	LESS PROMOTIONAL ALLOWANCE/ LESS TEMP COMPET ALL
1283	Shell Invoice Grouped With Photocopy of Purchase Order No. 10386, five pages	LESS PROMOTIONAL ALLOWANCE/ LESS TEMP COMPET ALL
1285	Shell Invoice Grouped With Photocopy of Purchase Order No. 10413, six pages	LESS TEMP COMPET ALL
1284	Shell Invoice Grouped With Photocopy of Purchase Order No. 10412, six pages	LESS TEMP COMPET ALL
1286	Shell Invoice Grouped With Photocopy of Purchase Order No. 10414, six pages	LESS TEMP COMPET ALL
1287	Shell Invoice Grouped With Photocopy of Purchase Order No. 10430, seven pages	LESS TEMP COMPET ALL

Trial Ex. #	Description	Type of Allowance
1288	Shell Invoice Grouped With Photocopy of Purchase Order No. 10431, six pages	LESS TEMP COMPET ALL
1289	Shell Invoice Grouped With Photocopy of Purchase Order No. 10474, five pages	NONE
1296	Shell Invoice Grouped With Photocopy of Purchase Order No. 10475, six pages	NONE
1290	Shell Invoice Grouped With Photocopy of Purchase Order No. 10502, six pages	NONE
1291	Shell Invoice Grouped With Photocopy of Purchase Order No. 10503, six pages	NONE
1293	Shell Invoice Grouped With Photocopy of Purchase Order No. 10542, five pages	NONE
1294	Shell Invoice Grouped With Photocopy of Purchase Order No. 10549, five pages	NONE
1295	Shell Invoice Grouped With Photocopy of Purchase Order No. 10561, five pages	NONE

Trial Ex. #	Description	Type of Allowance
1297	Shell Invoice Grouped With Photocopy of Purchase Order No. 10747, six pages	NONE
1298	Shell Invoice Grouped With Photocopy of Purchase Order No. 10776, five pages	NONE
1299	Shell Invoice Grouped With Photocopy of Purchase Order No. 10799, six pages	NONE
1300	Shell Invoice Grouped With Photocopy of Purchase Order No. 10800, six pages	NONE
1301	Shell Invoice Grouped With Photocopy of Purchase Order No. 10805, four pages	NONE
1302	Shell Invoice Grouped With Photocopy of Purchase Order No. 10806, five pages	NONE
1303	Shell Invoice Grouped With Photocopy of Purchase Order No. 10811, six pages	NONE
1304	Shell Invoice Grouped With Photocopy of Purchase Order No. 10830, seven pages	NONE

Trial Ex. #	Description	Type of Allowance
1305	Shell Invoice Grouped With Photocopy of Purchase Order No. 10912, six pages	NONE
1306	Shell Invoice Grouped With Photocopy of Purchase Order No. 10944, five pages	NONE
1307	Shell Invoice Grouped With Photocopy of Purchase Order No. 10951, five pages	NONE
1308	Shell Invoice Grouped With Photocopy of Purchase Order No. 10962, eleven pages	NONE
1309	Shell Invoice Grouped With Photocopy of Purchase Order No. 10969, twelve pages	NONE
1310	Shell Invoice Grouped With Photocopy of Purchase Order No. 10970, six pages	NONE
1311	Shell Invoice Grouped With Photocopy of Purchase Order No. 10986, five pages	NONE
1312	Shell Invoice Grouped With Photocopy of Purchase Order No. 10989, five pages	NONE

Trial Ex. #	Description	Type of Allowance
1313	Shell Invoice Grouped With Photocopy of Purchase Order No. 12601, four pages	NONE
1314	Shell Invoice Grouped With Photocopy of Purchase Order No. 12602, five pages	NONE
1315	Shell Invoice Grouped With Photocopy of Purchase Order No. 12651, five pages	NONE
1316	Shell Invoice Grouped With Photocopy of Purchase Order No. 12652, five pages	NONE
1317	Shell Invoice Grouped With Photocopy of Purchase Order No. 12674, five pages	NONE
1318	Shell Invoice Grouped With Photocopy of Purchase Order No. 12678, five pages	NONE
1319	Shell Invoice Grouped With Photocopy of Purchase Order No. 12683, six pages	NONE
1320	Shell Invoice Grouped With Photocopy of Purchase Order No. 12734, three pages	NONE

Trial Ex. #	Description	Type of Allowance
1321	Shell Invoice Grouped With Photocopy of Purchase Order No. 12778, five pages	NONE
1322	Shell Invoice Grouped With Photocopy of Purchase Order No. 12804, six pages	NONE
1334	Shell Invoice Grouped With Photocopy of Purchase Order No. 13721, five pages	NONE
1335	Shell Invoice Grouped With Photocopy of Purchase Order No. 13721, seventeen pages	NONE
1324	Shell Invoice Grouped With Photocopy of Purchase Order No. 12931, five pages	NONE
1325	Shell Invoice Grouped With Photocopy of Purchase Order No. 12932, six pages	NONE
1323	Shell Invoice Grouped With Photocopy of Purchase Order No. 12946, six pages	NONE
1327	Shell Invoice Grouped With Photocopy of Purchase Order No. 12947, six pages	NONE

Trial Ex. #	Description	Type of Allowance
1326	Shell Invoice Grouped With Photocopy of Purchase Order No. 13046, six pages	NONE
1330	Shell Invoice Grouped With Photocopy of Purchase Order No. 13073, nine pages	NONE
1331	Shell Invoice Grouped With Photocopy of Purchase Order No. 13097, five pages	NONE
1332	Shell Invoice Grouped With Photocopy of Purchase Order No. 13119, five pages	NONE
1333	Shell Invoice Grouped With Photocopy of Purchase Order No. 13120, five pages	NONE
1336	Shell Invoice Grouped With Photocopy of Purchase Order No. 13128, five pages	NONE
1337	Shell Invoice Grouped With Photocopy of Purchase Order No. 13145, six pages	NONE
1338	Shell Invoice Grouped With Photocopy of Purchase Order No. 13154, five pages	NONE

Trial Ex. #	Description	Type of Allowance
1339	Shell Invoice Grouped With Photocopy of Purchase Order No. 13162, five pages	NONE
1340	Shell Invoice Grouped With Photocopy of Purchase Order No. 13166, five pages	NONE
1341	Shell Invoice Grouped With Photocopy of Purchase Order No. 13279, five pages	NONE
1342	Shell Invoice Grouped With Photocopy of Purchase Order No. 13280, six pages	NONE
1343	Shell Invoice Grouped With Photocopy of Purchase Order No. 15012, six pages	NONE
1344	Shell Invoice Grouped With Photocopy of Purchase Order No. 14926, five pages	NONE
1345	Shell Invoice Grouped With Photocopy of Purchase Order No. 14927, seven pages	NONE
1346	Shell Invoice Grouped With Photocopy of Purchase Order No. 15090, five pages	NONE

Trial Ex. #	Description	Type of Allowance
1347	Shell Invoice Grouped With Photocopy of Purchase Order No. 15091, six pages	NONE
1348	Shell Invoice Grouped With Photocopy of Purchase Order No. 15106, six pages	NONE
1349	Shell Invoice Grouped With Photocopy of Purchase Order No. 15169, five pages	NONE
1350	Shell Invoice Grouped With Photocopy of Purchase Order No. 15564, five pages	NONE
1351	Shell Invoice Grouped With Photocopy of Purchase Order No. 15578, five pages	NONE
1352	Shell Invoice Grouped With Photocopy of Purchase Order No. 15579, five pages	NONE
1328	Shell Invoice Grouped With Photocopy of Purchase Order No. 15590, five pages	NONE
1329	Shell Invoice Grouped With Photocopy of Purchase Order No. 15591, five pages	NONE

Trial Ex. #	Description	Type of Allowance
1353	Photocopy of Purchase Order No. 15590, one page	NONE
1354	Shell Invoice Grouped With Photocopy of Purchase Order No. 15591, one page	NONE
1355	Shell Invoice Grouped With Photocopy of Purchase Order No. 15592, five pages	NONE
1356	Shell Invoice Grouped With Photocopy of Purchase Order No. 15610, six pages	NONE
1357	Shell Invoice Grouped With Photocopy of Purchase Order No. 15628, five pages	NONE
1358	Shell Invoice Grouped With Photocopy of Purchase Order No. 15629, two pages	NONE
1359	Shell Invoice Grouped With Photocopy of Purchase Order No. 15634, five pages	NONE
1360	Shell Invoice Grouped With Photocopy of Purchase Order No. 15635, six pages	NONE

Trial Ex. #	Description	Type of Allowance
1361	Shell Invoice Grouped With Photocopy of Purchase Order No. 15636, five pages	NONE
1362	Shell Invoice Grouped With Photocopy of Purchase Order No. 15671, six pages	NONE
1363	Shell Invoice Grouped With Photocopy of Purchase Order No. 15672, five pages	NONE
1364	Shell Invoice Grouped With Photocopy of Purchase Order No. 15673, six pages	NONE
1365	Shell Invoice Grouped With Photocopy of Purchase Order No. 15674, six pages	NONE

JA-440

[Trial Exhibit 392 –
Aerial Photo]

[Trial Exhibit 1070]

SHELL CHEMICAL COMPANY

DATE MARCH 20, 1973

TO SAN RAMON – AGRICULURAL DIVISION MANAGER MARKETING SERVICES

FROM MANAGER SERVICES WESTERN MARKETING REGION AGRICULTURAL DIV.–WALNUT CREEK

SUBJECT1973 MARKETING AGREEMENTS

We attach photocopies of 1973 Marketing Agreements for the following:

. Bakersfield Ag Chem
Brown & Bryant, Inc.
Britz Chemical Co.
NH3 Service Co.
Frank Olocco Agric. Pest Control
Valley Farm Supply

/s/ W. B. Cochrane
W. B. Cochrane

Attachments

cc: Fresno - WMR - District Manager) w/o attachment
San Ramon - AD - IS (2))

[Shell logo omitted]

SHELL CHEMICAL COMPANY
A DIVISION OF SHELL OIL COMPANY
AGRICULTURAL DIVISION
MARKETING AGREEMENT - 1973

Gentlemen:

It is our intention to enter into an Agreement with you concerning the resale of the Shell pesticides listed in this Agreement.

Shell's objective in making this Agreement with you is to maximize penetration of Shell's pesticides in the area of your primary marketing responsibility. To accomplish this objective, we believe that a clear understanding of key responsibilities for each party is essential.

I. Area of Primary Marketing Responsibility

Your area of primary marketing responsibility is defined as:

1. (written definition attached) ☐ Kern County
2. (attached map) ☐

II. Responsibilities

1. Brown & Bryant, Inc. responsibilities:
   (Customer)

   Your organization agrees to assume the following responsibilities:

1. Maintain competent sales and technical personnel sufficient to provide adequate service to customers in your area of primary marketing responsibility.
2. Be familiar with pest problems in your marketing area, with Agricultural Extension service recommendations, and instruct your sales force accordingly. You will follow instructions on the label and make no claim as to performance or application techniques which are not clearly expressed thereon. You will keep customers informed of any label changes and/or recommendations.
3. Maintain adequate inventories of Shell Pesticides in order to provide prompt shipments to customers throughout your primary area of responsibility.
4. Bring in your key pesticide personnel for a Shell instructed one-day meeting when mutually beneficial. The purpose of these meetings will be to review with your personnel the technical aspects of Shell Pesticides as well as pertinent marketing information.
5. Cooperate with Shell in the implementation of its sales, advertising and other promotional programs.
6. Make prompt initial investigations and report to Shell all customer product complaints and cooperate with Shell in the appropriate handling of such product complaints.

7. Where a product carries an inventory protection clause, you will complete and return to Shell the information necessary by the date specified. Forms will be sent to you with the monthly statement the month prior to the due date for each product involved (example attached).

III. Shell Responsibilities

In consideration of the above, Shell agrees to:

1. Carry ar. advertising campaign which will appear in national as well as local media. In addition, we will supply literature for direct mail, sales aids and visual material for your marketing organization.
2. Offer to you as introduced by Shell, various product promotion programs dealing with Shell Pesticides to assist you in gaining maximum returns on Shell Pesticides.
3. Assist you and keep you informed of any technical problems concerning Shell Pesticides that may arise in their sales and application.
4. Supply informative speakers for your sales meetings and dealer/grower meetings whenever possible.

IV. Agreement

Having mutually agreed to all of these responsibilities, Shell will make available to you and you will endeavor to purchase and resell the quantities of pesticides outlined on Exhibit A. The prices and terms shall be those attached and in the order acknowledgment

portion of Shell's shipping order. Exhibit B is your best estimate of a schedule which will assist us in stocking warehouse paints to supply your orders.

If the above is acceptable to you, please indicate the same by signing in the space below. Please return the original and one copy. The other copy is for your files.

Very truly yours,

/s/ [illegible]
District Manager

Attachments

Brown & Bryant, Inc.

by /s/ [illegible]
Accepted

3/14/73
Date

EXHIBIT A
SHELL PRODUCTS MARKETING AGREEMENT
ANTICIPATED PURCHASES

PRODUCT: Aldrin Tech	
Total Previous Year Purchases (rebilled carryover plus purchases)	4.0M lbs
Less Carryover Inventory	
Net 1972 Purchases	4.0M lbs
Estimated 1973 Net Sales	0.3M lbs
Estimated 1973 Purchases from Shell	0.3M lbs.
PRODUCT: AZODRIN(R) 5 Insecticide	
Total Previous Year Purchases (rebilled carryover plus purchases)	1.0M gals
Less Carryover Inventory	
Net 1972 Purchases	–
Estimated 1973 Net Sales	1.0M gals
Estimated 1973 Purchases from Shell	1.0M gals
PRODUCT: D–D (R) Soil Fumigant	
Total Previous Year Purchases (rebilled carryover plus purchases)	106.0M gals
Less Carryover Inventory	
Net 1972 Purchases	106.0M gals
Estimated 1973 Net Sales	110.0M gals
Estimated 1973 Purchases from Shell	110.0M gals

PRODUCT: NEMAGON (R) 12.1C Soil Fumigant	
Total Previous Year Purchases (rebilled carryover plus purchases)	4.0M gals
Less Carryover Inventory	
Net 1972 Purchases	4.0M gals
Estimated 1973 Net Sales	3.5M gals
Estimated 1973 Purchases from Shell	3.5M gals
PRODUCT: NEMAGON(R) 12.1 EC Soil Fumigant	
Total Previous Year Purchases (rebilled carryover plus purchases)	0.9M gals
Less Carryover Inventory	
Net 1972 Purchases	0.9M gals
Estimated 1973 Net Sales	2.0M gals
Estimated 1973 Purchases from Shell	2.0M gals
PRODUCT: PLANAVIN(R) 4 Herbicide	
Total Previous Year Purchases (rebilled carryover plus purchases)	0.1M gals
Less Carryover Inventory	
Net 1972 Purchases	0.1M gals
Estimated 1973 Net Sales	0.2M gals
Estimated 1973 Purchases from Shell	0.2M gals
PRODUCT: PHOSDRIN(R) 4 Insecticide	
Total Previous Year Purchases (rebilled carryover plus purchases)	-

Less Carryover Inventory	_____
Net 1972 Purchases	-
Estimated 1973 Net Sales	_____
Estimated 1973 Purchases from Shell	_____
PRODUCT: PLANAVIN(R) W.P. Herbicide	
Total Previous Year Purchases (rebilled carryover plus purchases)	-
Less Carryover Inventory	_____
Net 1972 Purchases	-
Estimated 1973 Net Sales	_____
Estimated 1973 Purchases from Shell	_____
PRODUCT:	_____
Total Previous Year Purchases (rebilled carryover plus purchases)	_____
Less Carryover Inventory	_____
Net 19__ Purchases	_____
Estimated 19__ Net Sales	_____
Estimated 19__ Purchases from Shell	_____
PRODUCT:	_____
Total Previous Year Purchases (rebilled carryover plus purchases)	_____
Less Carryover Inventory	_____
Net 19__ Purchases	_____
Estimated 19__ Net Sales	_____
Estimated 19__ Purchases from Shell	_____

[Trial Exhibit 1071]
[Shell letterhead omitted]
1980 MARKETING AGREEMENT

Jan 23 1980

Brown & Bryant
CUSTOMER
P. O. Bin T
ADDRESS
Shafter, Calif
93263

Dear Mr. Hagenston

It is our desire to enter into an Agreement with you concerning the resale of the Shell pesticides listed in Exhibit A to this Agreement.

Shell's objective in making this Agreement with you is to maximize penetration of Shell's pesticides in your area of primary marketing responsibility, consistent with label directions and pesticide requirements in your area. To accomplish this objective, we believe that a clear understanding of key responsibilities for each party is essential.

I. TERM

The term of this Agreement shall be from the date first written above until December 31, 1980. This Agreement may be cancelled by either party thereto upon the giving of at least 10 days written notice mailed to the other party at its primary business address.

II. AREA OF PRIMARY MARKETING RESPONSIBILITY

Your area of primary marketing responsibility is defined by the following written definition ____✓____ or attached map _____.

[Handwritten:] Kings, Tulane, and Kern Counties of Calif.

III. RESPONSIBILITIES

A. Customer Responsibilities

Your organization agrees to assume the following responsibilities:

1. Maintain competent sales and technical personnel sufficient to provide adequate service to customers in the area of primary marketing responsibility (defined above).
2. Be familiar with pest problems in the marketing area and with Agricultural Extension Service recommendations, and instruct the sales force accordingly. Follow instructions on the label and make no claim as to performance or application techniques which are not clearly expressed thereon. Keep customers informed of any label changes and/or recommendations.
3. Maintain adequate inventories of Shell pesticides in order to provide prompt shipments to customers throughout the primary area of responsibility. Product is to be stored in a safe manner in accordance with federal, state and local regulations. Inventory of Shell products should be moved on a first in, first out, basis to insure product and container integrity.

4. Bring in key pesticide personnel for a Shell instructed technical meeting when mutually beneficial. The purpose of this meeting will be to review with your personnel the technical aspects of Shell pesticides, label changes, new labels, as well as pertinent marketing information.
5. Cooperate with Shell in the implementation of its sales, advertising and other promotional programs.
6. Make initial investigations of complaints concerning Shell pesticides reported to you. Promptly relay this information to the Shell sales Representative or District Office in your area. In the case of herbicide complaints, the initial report must be received by Shell within 60 days of application or planting, whichever is later. Cooperate with Shell in the appropriate handling of such product complaints.
7. Inventory Rebilling – Certain products carry an inventory rebilling provision on the price schedule. In order to obtain this inventory rebilling, your organization must complete and return specified forms which will be mailed to your office at the end of the season. All inventory for which rebilling is claimed is subject to audit by Shell and must be reported by location.
8. Sales Tax Exemption – Shell must have a sales tax exemption certificate on file for each state where product(s) is shipped to you to avoid charging you sales tax. Exhibit C lists the states which do not have

a sales tax exemption certificate on file where Shell normally ships product to you. Please complete and sign the sales tax exemption certificates attached to Exhibit C.

9. Customer shall comply with all federal, state and local laws and regulations regarding the storage, transporting, handling and use of Shell pesticides. Customer shall also assure that appropriate measures are taken to protect persons, property and the total environment while they are being stored and transported.

10. Information supplied by Shell regarding the safe handling, use and disposal of Shell products shall be disseminated in a timely manner to all purchasers and end-users of the products listed in Exhibit A. Distributor should discourage unsafe or improper applications of Shell products and should not sell Shell products to anyone who does not use such products in a manner consistent with Shell's recommendations and labels and in a way that protects man and the environment.

B. Shell Responsibilities

In consideration of the above, Shell agrees to:

1. Conduct an advertising campaign which will appear in national as well as local media. In addition, Shell will supply literature and visual material for direct mail and use as sales aids by your marketing organizations.

2. Offer to you, as introduced by Shell, various product promotion programs dealing with Shell pesticides.
3. Assist you and keep you informed of any technical problems concerning Shell pesticides that may arise from their sale or application.
4. Supply informative speakers for your sales meetings and dealer/grower meetings whenever possible.
5. Investigate all pesticide claims which are made within 60 days of either application or planting, whichever is later. Claims after 60 days will be investigated only upon receipt of written notification to Shell's District Office setting forth a satisfactory reason for the delay.

IV. PRICE CHANGES

The attached price schedules are subject to change without notice. However, it is our intention to promptly advise the person designated by you of all price changes. All product will be invoiced at the prices and terms in effect at the time of shipment.

V. AGREEMENT

Having mutually agreed to all of these responsibilities and subject to product availability, Shell's right to allocate scarce product as Shell deems fit, and credit approval, Shell will make available to you and you will endeavor to purchase and resell the quantities of pesticides outlined in Exhibit A. Subject to III above, the prices and terms of sale shall be those set forth in Shell's Order Acknowledgement, and those set forth on

the Distributor Price Schedules, attached hereto as Exhibit B.

VI. ENTIRETY/EXECUTION

This marketing Agreement terminates all prior marketing Agreements, merges with and supersedes all prior presentations and understandings, and constitutes the entire understanding concerning marketing of Shell's pesticides between Shell and Brown & Bryant .
Customer

If the above is acceptable to you, please indicate the same by signing in the space below.

Please return the original and one copy. The other copy is for your files.

/s/ R. Woolley
District Manager

Attachments

/s/ Al Hagenston
Accepted

1/24/80
Date

Please advise the following person
of all price changes:

Al Hagenston
Name

805-746-4971
Phone

PYDRIN® INSECTICIDE

SUPPLEMENT TO 1980 MARKETING AGREEMENT

The following items are conditions of sale for PYDRIN® Insecticide that are additional to those contained in pages 1 through 3 of the 1980 Marketing Agreement.

1. Patent Rights - - PYDRIN is covered by a U.S. patent owned by Sumitomo Chemical Company under which Shell holds rights. Sales of PYDRIN to you carries with it the right under such U.S. patent application (and any patent issuing thereon) to use and sell PYDRIN. However, such sale includes no rights under foreign patents or patent applications.
2. Liability - - Shell's liability for product sold hereunder shall be limited in accordance with the terms of the Notice of Warranty on the product label.

/s/ Al Hagenston	/s/ R. Woolley
ACCEPTED (DISTRIBUTION)	SHELL DISTRICT MANAGER
571 So. Elm, Shafter, Ca.	2/6/80
LOCATION	DATE
1/24/80	
DATE	

EXHIBIT A
SHELL PRODUCTS MARKETING AGREEMENT
ANTICIPATED PURCHASES

PRODUCT: AZODRIN 5	
1978 Actual Carryover Inventory	
1979 Purchases	730 gal
Total Available for Sale in 1979	
Less 1979 Actual Carryover Inventory	0
1979 Net Sales	
1980 Estimated Net ~~Purchases~~ Sales	1000 gal
1980 Estimated Purchases from Shell	
PRODUCT: DD	
1978 Actual Carryover Inventory	0
1979 Purchases	125,000 gal
Total Available for Sale in 1979	
Less 1979Actual Carryover Inventory	0
1979 Net Purchases	
1980 Estimated Net Sales	120,000 gal
1980 Estimated Purchases from Shell	
PRODUCT: NUDRIN 90	
1978 Actual Carryover Inventory	0
1979 Purchases	2500 lbs
Total Available for Sale in 1979	
Less 1979 Actual Carryover Inventory	6 lbs
1979 Net Purchases	
1980 Estimated Net Sales	4,000 lbs

1980 Estimated Purchases from Shell	
PRODUCT: PHOSDRIN 4EC	
1978 Actual Carryover Inventory	
1979 Purchases	200 gal
Total Available for Sale in 1979	
Less 1979 Actual Carryover Inventory	0
1979 Net Purchases	
1980 Estimated Net Sales	400 gal
1980 Estimated Purchases from Shell	
PRODUCT: VENDEX 50	
1978 Actual Carryover Inventory	
1979 Purchases	4,200 lbs
Total Available for Sale in 1979	
Less 1979 Actual Carryover Inventory	0
1979 Net Purchases	
1980 Estimated Net Sales	5,000 lbs
1980 Estimated Purchases from Shell	

EXHIBIT B

SHELL PRODUCTS MARKETING AGREEMENT

ANTICIPATED PURCHASES

PRODUCT: PYDRIN

1978 Actual Carryover Inventory	
1979 Purchases	
Total Available for Sale in 1979	
Less 1979 Actual Carryover Inventory	0
1979 Net Purchases	
1980 Estimated Net Purchases	500 gals
1980 Estimated Purchases from Shell	

PRODUCT:

1978 Actual Carryover Inventory	
1979 Purchases	
Total Available for Sale in 1979	
Less 1979 Actual Carryover Inventory	
1979 Net Purchases	
1980 Estimated Net Purchases	
1980 Estimated Purchases from Shell	

* * *

EXHIBIT C

SALES TAX EXEMPTION CERTIFICATES

Please complete and sign each of the sales tax exemption certificates attached to this Exhibit.

States Where Sales Tax Exemption Certificates Are on File:	States Where Sales Tax Exemption Certificates Are Not on File:

[Trial Exhibit 1072]
[Shell letterhead omitted]

1983 MARKETING AGREEMENT

1/31 1983

Brown & Bryant
CUSTOMER
P O Box 426
ADDRESS
Shafter, Calif
93263

Dear Mr. Hagenston

It is our desire to enter into an Agreement with you concerning the resale of the Shell pesticides listed in Exhibit A to this Agreement.

Shell's objective in making this Agreement with you is to maximize penetration of Shell's pesticides in your area of primary marketing responsibility, consistent with label directions and pesticide requirements in your area. To accomplish this objective, we believe that a clear understanding of key responsibilities for each party is essential.

I. TERM

The term of this Agreement shall be from the date first written above until December 31, 1983. This

Agreement may be cancelled by either party thereto upon the giving of at least 10 days written notice mailed to the other party at its primary business address.

Ex. 1072

II. AREA OF PRIMARY MARKETING RESPONSIBILITY

Your area of primary marketing responsibility is defined by the following written definition ____✓____ or attached map _____.

[Handwritten:] Tulane, Kern and Ventura Counties

III. RESPONSIBILITIES

A. Customer Responsibilities

Your organization agrees to assume the following responsibilities:

1. Maintain competent sales and technical personnel sufficient to provide adequate service to customers in the area of primary marketing responsibility (defined above).
2. Be familiar with pest problems in the marketing area and with Agricultural Extension Service recommendations, and instruct the sales force accordingly. Follow instructions on the label and make no claim as to performance or application techniques which are not clearly expressed thereon. Keep customers informed of any label changes and/or recommendations.
3. Maintain adequate inventories of Shell pesticides in order to provide prompt shipments to customers throughout the primary area of responsibility. Product is to be stored in a safe manner in accordance with federal, state and local regulations. Inventory of Shell products should be

moved on a first in, first out, basis to insure product and container integrity.

4. Bring in key pesticide personnel for a Shell instructed technical meeting when mutually beneficial. The purpose of this meeting will be to review with your personnel the technical aspects of Shell pesticides, label changes, new labels, as well as pertinent marketing information.
5. Cooperate with Shell in the implementation of its sales, advertising and other promotional programs.
6. Make initial investigations of complaints concerning Shell pesticides reported to you. Promptly relay this information to the Shell sales Representative or District Office in your area. In the case of herbicide complaints, the initial report must be received by Shell within 60 days of application or planting, whichever is later. Cooperate with Shell in the appropriate handling of such product complaints.
7. Inventory Rebilling – Certain products carry an inventory rebilling provision on the price schedule. In order to obtain this inventory rebilling, your organization must complete and return specified forms which will be mailed to your office at the end of the season. All inventory for which rebilling is claimed is subject to audit by Shell and must be reported by location.
8. Sales Tax Exemption – Shell must have a sales tax exemption certificate on file for each state where product(s) is shipped to

you to avoid charging you sales tax. Exhibit C lists the states which do not have a sales tax exemption certificate on file where Shell normally ships product to you. Please complete and sign the sales tax exemption certificates attached to Exhibit C.

9. Customer shall comply with all federal, state and local laws and regulations regarding the storage, transporting, handling and use of Shell pesticides. Customer shall also assure that appropriate measures are taken to protect persons, property and the total environment while they are being stored and transported.

10. Information supplied by Shell regarding the safe handling, use and disposal of Shell products shall be disseminated in a timely manner to all purchasers and end-users of the products listed in Exhibit A. Distributor should discourage unsafe or improper applications of Shell products and should not sell Shell products to anyone who does not use such products in a manner consistent with Shell's recommendations and labels and in a way that protects man and the environment. Distributor agrees to participate in any training sessions Shell may conduct to enhance the safe handling of Shell products.

B. SHELL RESPONSIBILITIES

In consideration of the above, Shell agrees to:

1. Conduct an advertising campaign which will appear in national as well as local media. In addition, Shell will supply literature and visual material for direct mail and use as sales aids by your marketing organization.
2. Offer to you, as introduced by Shell, various product promotion programs dealing with Shell pesticides.
3. Assist you and keep you informed of any technical problems concerning Shell pesticides that may arise from their sale or application.
4. Supply informative speakers for your sales meetings and dealer/grower meetings whenever possible.
5. Investigate all pesticide claims which are made within 60 days of either application or planting, whichever is later. Claims after 60 days will be investigated only upon receipt or written notification to Shell's District Office setting forth a satisfactory reason for the delay.

IV. PRICE CHANGES

The attached price schedules are subject to change without notice. However, it is our intention to promptly advise the person designated by you of all price changes. All product will be invoiced at the prices and terms in effect at the time of shipment.

V. Having mutually agreed to all of these responsibilities and subject to product availability, Shell's right to allocate scarce product as Shell deems fit, and credit approval, Shell will make available to you and you will endeavor to purchase and resell the quantities of pesticides outlined in Exhibit A. Subject to III above, the prices and terms of sale shall be those set forth in Shell's Order Acknowledgement, and those set forth on the Distributor Price Schedules, attached hereto as Exhibit B.

VI. ENTIRETY/EXECUTION

This marketing Agreement terminates all prior marketing Agreements, merges with and supersedes all prior presentations and understandings, and constitutes the entire understanding concerning marketing of Shell's pesticides between Shell and Brown & Bryant .
Customer

If the above is acceptable to you, please indicate the same by signing in the space below.

Please return the original and one copy. The other copy is for your files.

/s/ Ray Wisnom
District Manager

Attachments

/s/ Al Hagenston
Accepted

1/31/83
Date

Please advise the following person
of all price changes:

Al Hagenston
Name

805-746-4971
Phone

EXHIBIT A

SHELL PRODUCTS MARKETING AGREEMENT

ANTICIPATED PURCHASES

PRODUCT: Azodrin 5	
1981 Actual Carryover Inventory	0
1982 Purchases	0
Total Available for Sales in 1982	0
Less 1982 Actual Carryover Inventory	0
1982 Net Sales	0
1983 Estimated Net Sales	250
1983 Estimated Purchases from Shell	250 gallons
PRODUCT: Bladex 80w	
1981 Actual Carryover Inventory	0
1982 Purchases	2,000
Total Available for Sales in 1982	2,000
Less 1982 Actual Carryover Inventory	150
1982 Net Sales	1850
1983 Estimated Net Sales	5000
1983 Estimated Purchases from Shell	4850 lbs
PRODUCT: D-D	
1981 Actual Carryover Inventory	0
1982 Purchases	141.0
Total Available for Sales in 1982	141.0
Less 1982 Actual Carryover Inventory	0
1982 Net Sales	141.0
1983 Estimated Net Sales	135.0

1983 Estimated Purchases from Shell	135.0 gallons
PRODUCT: Nudrin 90 sp	
1981 Actual Carryover Inventory	0
1982 Purchases	1620
Total Available for Sales in 1982	1620
Less 1982 Actual Carryover Inventory	0
1982 Net Sales	1620
1983 Estimated Net Sales	3100
1983 Estimated Purchases from Shell	3100
PRODUCT: Pydrin 2.4	
1981 Actual Carryover Inventory	0
1982 Purchases	192
Total Available for Sales in 1982	192
Less 1982 Actual Carryover Inventory	0
1982 Net Sales	192
1983 Estimated Net Sales	250
1983 Estimated Purchases from Shell	250
PRODUCT: Vendex 50w	
1981 Actual Carryover Inventory	500 lbs
1982 Purchases	0
Total Available for Sales in 1982	500
Less 1982 Actual Carryover Inventory	0
1982 Net Sales	500
1983 Estimated Net Sales	4000

1983 Estimated Purchases from Shell	4000
PRODUCT:	
1981 Actual Carryover Inventory	
1982 Purchases	
Total Available for Sales in 1982	
Less 1982 Actual Carryover Inventory	
1982 Net Sales	
1983 Estimated Net Sales	
1983 Estimated Purchases from Shell	

* * *

[Logo omitted]	SHELL CHEMICAL COMPANY SALES TAX EXEMPTION CERTIFICATE	CUSTOMER NO.
		STATE OF

T O	Shell Oil Company Tax Reports P O Box 20329 Houston, Texas 77025	F R O M	Purchaser
			Address
			City, State

IMPORTANT: SEE REVERSE SIDE FOR INSTRUCTIONS

UNLESS THIS CERTIFICATE IS MARKED BELOW AS SINGLE PURCHASE CERTIFICATE, IT SHALL BE CONSIDERED PART OF ANY ORDER GIVEN TO YOU AND SHALL REMAIN IN FORCE UNTIL REVOKED BY WRITTEN NOTICE TO YOU

□ SINGLE PURCHASE CERTIFICATE □ BLANKET CERTIFICATE

[Handwritten notation omitted]

CERTIFICATION: CHECK APPROPRIATE EXEMPTION

I AM ENGAGED IN THE BUSINESS OF _____ AND ALL TANGIBLE PERSONAL PROPERTY PURCHASED BY THE UNDERSIGNED FROM YOU WILL BE PURCHASED FOR USE AS FOLLOWS:

□ FOR RESALE AS TANGIBLE PERSONAL PROPERTY AS RECEIVED FROM YOU
I HEREBY CERTIFY THAT I HOLD A VALID SELLER'S PERMIT NO _____

ISSUED ON _____ BY STATE OF _____
DATE STATE

☐ TO BE INCORPORATED AS A MATERIAL OR PART OF OTHER TANGIBLE PERSONAL PROPERTY TO BE PRODUCED FOR SALE BY MANUFACTURING, ASSEMBLING, PROCESSING OR REFINING

OTHER DESCRIBE EXEMPT USE AND SPECIFY SECTION OF SALES AND USE TAX ACT COVERING THIS EXEMPTION

_____

_____

_____

IN THE EVENT ANY SUCH PROPERTY IS USED FOR ANY PURPOSE OTHER THAN RETENTION, DEMONSTRATION OR DISPLAY WHILE HOLDING IT FOR SALE OR USE AS ABOVE IN THE REGULAR COURSE OF BUSINESS, IT IS UNDERSTOOD THAT I AM REQUIRED BY THE SALES AND THE USE TAX ACT TO REPORT AND PAY TAX MEASURED BY THE PURCHASE PRICE OF SUCH PROPERTY

DESCRIPTION OF PROPERTY TO BE PURCHASED FOR AN EXEMPT PURPOSE		
LIST PRODUCTS		
SIGNED BY	TITLE	DATE

PYDRIN® INSECTICIDE

SUPPLEMENT TO 1983 MARKETING AGREEMENT

The following items are conditions of sale for PYDRIN® Insecticide that are additional to those contained in pages 1 through 3 of the 1983 Marketing Agreement.

1. Patent Rights -- PYDRIN is covered by a U.S. patent owned by Sumitomo Chemical Company under which Shell holds rights. Sales of PYDRIN to you carries with it the right under such U.S. patent application (and any patent issuing thereon) to use and sell PYDRIN. However, such sale includes no rights under foreign patents or patent applications.
2. Liability -- Shell's liability for product sold hereunder shall be limited in accordance with the terms of the Notice of Warranty on the product label.

/s/ Al Hagenston	/s/ Ray Wisnom
ACCEPTED (DISTRIBUTION)	SHELL DISTRICT MANAGER
	2/15/83
Brown & Bryant	
PO Box 426	1/31/83
LOCATION	DATE
Shafter /Arvin Kern Co/Calif.	
1/31/83	
DATE	

[Trial Exhibit 1073]
[Shell letterhead omitted]
1984 MARKETING AGREEMENT

1/25/ 1984

BROWN & BRYANT
CUSTOMER
P O BIN T
ADDRESS
SHAFTER, CALIF 93263

Dear Mr. Hagenston

It is our desire to enter into an Agreement with you concerning the resale of the Shell pesticides listed in Exhibit A to this Agreement.

Shell's objective in making this Agreement with you is to maximize penetration of Shell's pesticides in your area of primary marketing responsibility, consistent with label directions and pesticide requirements in your area. To accomplish this objective, we believe that a clear understanding of key responsibilities for each party is essential.

I. TERM

The term of this Agreement shall be from the date first written above until December 31, 1984. This Agreement may be cancelled by either party thereto upon the giving of at least 10 days written notice mailed to the other party at its primary business address.

II. AREA OF PRIMARY MARKETING RESPONSIBILITY

Your area of primary marketing responsibility is defined by the following written definition ___✓___ or attached map _____.

[Handwritten:] Tulane, Kern and Ventura Counties of Calif.

III. RESPONSIBILITIES

A. Customer Responsibilities

Your organization agrees to assume the following responsibilities:

1. Maintain competent sales and technical personnel sufficient to provide adequate service to customers in the area of primary marketing responsibility (defined above).
2. Be familiar with pest problems in the marketing area and with Agricultural Extension Service recommendations, and instruct the sales force accordingly. Follow instructions on the label and make no claim as to performance or application techniques which are not clearly expressed thereon. Keep customers informed of any label changes and/or recommendations.
3. Maintain adequate inventories of Shell pesticides in order to provide prompt shipments to customers throughout the primary area of responsibility. Product is to be stored in a safe manner in accordance with federal, state and local regulations. Inventory of Shell products should be moved on a first in, first out, basis to insure product and container integrity.

4. Bring in key pesticide personnel for a Shell instructed technical meeting when mutually beneficial. The purpose of this meeting will be to review with your personnel the technical aspects of Shell pesticides, label changes, new labels, as well as pertinent marketing information.
5. Cooperate with Shell in the implementation of its sales, advertising and other promotional programs.
6. Make initial investigations of complaints concerning Shell pesticides reported to you. Promptly relay this information to the Shell sales Representative or District Office in your Area. In the case of herbicide complaints, the initial report must be received by Shell within 60 days of application or planting, whichever is later. Cooperate with Shell in the appropriate handling of such product complaints.
7. Inventory Rebilling – Certain products carry an inventory rebilling provision on the price schedule. In order to obtain this inventory rebilling, your organization must complete and return specified forms which will be mailed to your office at the end of the season. All inventory for which rebilling is claimed is subject to audit by Shell and must be reported by location.
8. Sales Tax Exemption – Shell must have a sales tax exemption certificate on file for each state where product(s) is shipped to you to avoid charging you sales tax. Exhibit C lists the states which do not have

a sales tax exemption certificate on file where Shell normally ships product to you. Please complete and sign the sales tax exemption certificates attached to Exhibit C.

9. Customer shall comply with all federal, state and local laws and regulations regarding the storage, transporting, handling and use of Shell pesticides. Customer shall also assure that appropriate measures are taken to protect persons, property and the total environment while they are being stored and transported.

10. Information supplied by Shell regarding the safe handling, use and disposal of Shell products shall be disseminated in a timely manner to all purchasers and end-users of the products listed in Exhibit A. Distributor should discourage unsafe or improper applications of Shell products and should not sell Shell products to anyone who does not use such products in a manner consistent with Shell's recommendations and labels and in a way that protects man and the environment. Distributor agrees to participate in any training sessions Shell may conduct to enhance the safe handling of Shell products.

B. Shell Responsibilities

In consideration of the above, Shell agrees to:

1. Conduct an advertising campaign which will appear in national as well as local

media. In addition, Shell will supply literature and visual material for direct mail and use as sales aids by your marketing organizations.

2. Offer to you, as introduced by Shell, various product promotion programs dealing with Shell pesticides.
3. Assist you and keep you informed of any technical problems concerning Shell pesticides that may arise from their sale or application.
4. Supply informative speakers for your sales meetings and dealer/grower meetings whenever possible.
5. Investigate all pesticide claims which are made within 60 days of either application or planting, whichever is later. Claims after 60 days will be investigated only upon receipt or written notification to Shell's District Office setting forth a satisfactory reason for the delay.

IV. PRICE CHANGES

The attached price schedules are subject to change without notice. However, it is our intention to promptly advise the person designated by you of all price changes. All product will be invoiced at the prices and terms in effect at the time of shipment.

V. Having mutually agreed to all of these responsibilities and subject to product availability, Shell's right to allocate scarce product as Shell deems fit, and credit approval, Shell will make available to you and you will endeavor to purchase and resell the quantities of pesticides outlined in Exhibit A. Subject to III above, the prices and terms of sale shall be those set forth in Shell's Order Acknowledgement, and those set forth on the Distributor Price Schedules, attached hereto as Exhibit B.

VI. ENTIRETY/EXECUTION

This marketing Agreement terminates all prior marketing Agreements, merges with and supersedes all prior presentations and understandings, and constitutes the entire understanding concerning marketing of Shell's pesticides between Shell and Brown & Bryant.
Customer

If the above is acceptable to you, please indicate the same by signing in the space below.

Please return the original and one copy. The other copy is for your files.

/s/ Ray Wisnom
District Manager

Attachments

/s/ Al Hagenston
Accepted

1/25/84
Date

Please advise the following person
of all price changes:

Al Hagenston
Name

805-746-4971
Phone

PYDRIN® INSECTICIDE

SUPPLEMENT TO 1984 MARKETING AGREEMENT

The following items are conditions of sale for PYDRIN® Insecticide that are additional to those contained in pages 1 through 3 of the 1984 Marketing Agreement.

1. Patent Rights – PYDRIN is covered by a U.S. patent owned by Sumitomo Chemical Company under which Shell holds rights. Sales of PYDRIN to you carries with it the right under such U.S. patent application (and any patent issuing thereon) to use and sell PYDRIN. However, such sale includes no rights under foreign patents or patent applications.
2. Liability – Shell's liability for product sold hereunder shall be limited in accordance with the terms of the Notice of Warranty on the product label.

/s/ Al Hagenston	/s/ Ray Wisnom
ACCEPTED (DISTRIBUTION)	SHELL DISTRICT MANAGER
Shafter, Ca	1/27/84
LOCATION	DATE
1/25/84	
DATE	

EXHIBIT A
SHELL PRODUCTS MARKETING AGREEMENT
ANTICIPATED PURCHASES

PRODUCT: AZODRIN	
1982 Actual Carryover Inventory	0
1983 Purchases	0
Total Available for Sale in 1983	0
Less 1983 Actual Carryover Inventory	0
1983 Net Sales	0
1984 Estimated Net Sales	.3 gal
1984 Estimated Purchases from Shell	.3 gal
PRODUCT: BLADEX 4L	
1982 Actual Carryover Inventory	0
1983 Purchases	.4 gal
Total Available for Sale in 1983	.4 gal
Less 1983 Actual Carryover Inventory	.2 gal
1983 Net Sales	.2 gal
1984 Estimated Net Sales	2.0 gal
1984 Estimated Purchases from Shell	2.2
PRODUCT: DD	
1982 Actual Carryover Inventory	0
1983 Purchases	132,430 gal
Total Available for Sale in 1983	132,430 gal
Less 1983 Actual Carryover Inventory	0
1983 Net Sales	132,430
1984 Estimated Net Sales	26.0 gal

1984 Estimated Purchases from Shell	26.0 gal
PRODUCT: NUDRIN 90	
1982 Actual Carryover Inventory	0
1983 Purchases	4860 lbs
Total Available for Sale in 1983	4860 lbs
Less 1983 Actual Carryover Inventory	860 lbs
1983 Net Sales	4000 lbs
1984 Estimated Net Sales	6.0 lbs
1984 Estimated Purchases from Shell	6.8 lbs
PRODUCT: PHOSDRIN 2/EC	
1982 Actual Carryover Inventory	
1983 Purchases	0
Total Available for Sale in 1983	0
Less 1983 Actual Carryover Inventory	0
1983 Net Sales	0
1984 Estimated Net Sales	.2
1984 Estimated Purchases from Shell	.2
PRODUCT: PYDRIN	
1982 Actual Carryover Inventory	0
1983 Purchases	0
Total Available for Sale in 1983	0
Less 1983 Actual Carryover Inventory	0
1983 Net Sales	0
1984 Estimated Net Sales	.2

1984 Estimated Purchases from Shell	.2
PRODUCT: VENDEX 4L	
1982 Actual Carryover Inventory	0
1983 Purchases	432 gal
Total Available for Sale in 1983	432 gal
Less 1983 Actual Carryover Inventory	327 gal
1983 Net Sales	105 gal
1984 Estimated Net Sales	3 gal
1984 Estimated Purchases from Shell	637 gal
PRODUCT: VENDEX 50W	
1982 Actual Carryover Inventory	0
1983 Purchases	0
Total Available for Sale in 1983	0
Less 1983 Actual Carryover Inventory	0
1983 Net Sales	0
1984 Estimated Net Sales	0
1984 Estimated Purchases from Shell	0

[Trial Exhibit 1075]
[Shell letterhead omitted]

1986 MARKETING AGREEMENT

February 21, 1986

Mr. Jack Brown
Brown & Bryant
P. O. Bin T
Shafter, CA 93263

Dear Mr. Brown

It is our desire to enter into an Agreement with you concerning the resale of the Shell pesticides listed in Exhibit A to this Agreement.

Shell's objective in making this Agreement with you is to maximize penetration of Shell's pesticides in your area of primary marketing responsibility, consistent with label directions and pesticide requirements in your area. To accomplish this objective, we believe that a clear understanding of key responsibilities for each party is essential.

I. TERM

The term of this Agreement shall be from the date first written above until December 31, 1986. This Agreement may be cancelled by either party thereto upon the giving of at least 10 days written notice mailed to the other party at its primary business address.

II. AREA OF PRIMARY MARKETING RESPONSIBILITY

Your area of primary marketing responsibility is defined by the following written definition ___✓___ or attached map _____.

[Handwritten:] Tulane, Kern and Ventura Counties of Calif.

III. RESPONSIBILITIES

A. Customer Responsibilities

Your organization agrees to assume the following responsibilities:

1. Maintain competent sales and technical personnel sufficient to provide adequate service to customers in the area of primary marketing responsibility (defined above).
2. Be familiar with pest problems in the marketing area and with Agricultural Extension Service recommendations, and instruct the sales force accordingly. Follow instructions on the label and make no claim as to performance or application techniques which are not clearly expressed thereon. Keep customers informed of any label changes and/or recommendations.
3. Maintain adequate inventories of Shell pesticides in order to provide prompt shipments to customers throughout the primary area of responsibility. Product is to be stored in a safe manner in accordance with federal, state and local regulations. Inventory of Shell products should be moved on a first in, first out, basis to insure product and container integrity.

4. Bring in key pesticide personnel for a Shell instructed technical meeting when mutually beneficial. The purpose of this meeting will be to review with your personnel the technical aspects of Shell pesticides, label changes, new labels, as well as pertinent marketing information.
5. Cooperate with Shell in the implementation of its sales, advertising and other promotional programs.
6. Make initial investigations of complaints concerning Shell pesticides reported to you. Promptly relay this information to the Shell sales Representative or District Office in your area. In the case of herbicide complaints, the initial report must be received by Shell within 60 days of application or planting, whichever is later. Cooperate with Shell in the appropriate handling of such product complaints.
7. Inventory Rebilling – Certain products carry an inventory rebilling provision on the price schedule. In order to obtain this inventory rebilling, your organization must complete and return specified forms which will be mailed to your office at the end of the season. All inventory for which rebilling is claimed is subject to audit by Shell and must be reported by location.
8. Sales Tax Exemption – Shell must have a sales tax exemption certificate on file for each state where product(s) is shipped to you to avoid charging you sales tax. If we determine that you do not have a sales tax

exemption certificate on file where Shell ships product to you, we will ask you to complete, sign and return a sales tax exemption certificate for that state(s).

9. Customer shall comply with all federal, state and local laws and regulations regarding the storage, transporting, handling and use of Shell pesticides. Customer shall also assure that appropriate measures are taken to protect persons, property and the total environment while they are being stored and transported.

10. Information supplied by Shell regarding the safe handling, use and disposal of Shell products shall be disseminated in a timely manner to all purchasers and end-users of the products listed in Exhibit A. Distributor should discourage unsafe or improper applications of Shell products and should not sell Shell products to anyone who does not use such products in a manner consistent with Shell's recommendations and labels and in a way that protects man and the environment. Distributor agrees to participate in any training sessions Shell may conduct to enhance the safe handling of Shell products.

B. Shell Responsibilities

In consideration of the above, Shell agrees to:

1. Conduct an advertising campaign which will appear in national as well as local media. In addition, Shell will supply

literature and visual material for direct mail and use as sales aids by your marketing organization.

2. Offer to you, as introduced by Shell, various product promotion programs dealing with Shell pesticides.
3. Assist you and keep you informed of any technical problems concerning Shell pesticides that may arise from their sale or application.
4. Supply informative speakers for your sales meetings and dealer/grower meetings whenever possible.
5. Investigate all pesticide claims which are made within 60 days of either application or planting, whichever is later. Claims after 60 days will be investigated only upon receipt of written notification to Shell's District Office setting forth a satisfactory reason for the delay.

IV. PRICE CHANGES

Shell price schedules are subject to change without notice. However, it is our intention to promptly advise the person designated by you of all price changes. All product will be invoiced at the prices and terms in effect at the time of shipment.

V. Having mutually agreed to all of these responsibilities and subject to product availability, Shell's right to allocate scarce product as Shell deems fit, and credit approval, Shell will make available to you and you will endeavor to purchase and resell the quantities of pesticides outlined in Exhibit A. Subject to III above, the prices and terms of sale shall be those set forth in Shell's Order Acknowledgement, and those set forth on the Distributor Price Schedules.

VI. ENTIRETY/EXECUTION

This marketing Agreement terminates all prior marketing Agreements, merges with and supersedes all prior presentations and understandings, and constitutes the entire understanding concerning marketing of Shell's pesticides between Shell and Brown & Bryant.

If the above is acceptable to you, please indicate the same by signing in the space below.

Please return the original. The other copy is for your files.

/s/ Ray Wisnom
G. R. Wisnom
District Manager

Attachments

/s/ Al Hagenston
Accepted

3/[illegible]/86
Date

Please advise the following person
of all price changes:

Al Hagenston
Name

805-746-4971
Phone

EXHIBIT A

BROWN & BRYANT

SHELL PRODUCTS MARKETING AGREEMENT
ANTICIPATED PURCHASES

PRODUCT: BLADEX®4L HERBICIDE	LBS./ GALS.
1984 Actual Carryover Inventory	0
1985 Purchases	1300
Total Available for Sale in 1985	1300
Less 1985 Actual Carryover Inventory	400
1985 Net Sales	900
1986 Estimated Net Sales	1400
1986 Estimated Purchases from Shell	1000
PRODUCT: PYDRIN®2.4 INSECTICIDE	
1984 Actual Carryover Inventory	0
1985 Purchases	192
Total Available for Sale in 1985	192
Less 1985 Actual Carryover Inventory	56
1985 Net Sales	136
1986 Estimated Net Sales	200
1986 Estimated Purchases from Shell	144
PRODUCT: NUDRIN® 90 INSECTICIDE	
1984 Actual Carryover Inventory	0
1985 Purchases	2700
Total Available for Sale in 1985	2700
Less 1985 Actual Carryover	0

Inventory	
1985 Net Sales	2700
1986 Estimated Net Sales	4000
1986 Estimated Purchases from Shell	4000
PRODUCT: AZOBRIN® INSECTICIDE	
1984 Actual Carryover Inventory	0
1985 Purchases	189
Total Available for Sale in 1985	189
Less 1985 Actual Carryover Inventory	93
1985 Net Sales	96
1986 Estimated Net Sales	200
1986 Estimated Purchases from Shell	177
PRODUCT: PHOSDRIN® 4 INSECTICIDE	
1984 Actual Carryover Inventory	—
1985 Purchases	190
Total Available for Sale in 1985	190
Less 1985 Actual Carryover Inventory	—
1985 Net Sales	190
1986 Estimated Net Sales	200
1986 Estimated Purchases from Shell	200
PRODUCT: VENDEX® 4L MITICIDE	
1984 Actual Carryover Inventory	412
1985 Purchases	
Total Available for Sale in 1985	412
Less 1985 Actual Carryover Inventory	372
1985 Net Sales	40
1986 Estimated Net Sales	—
1986 Estimated Purchases from Shell	—

PRODUCT: VENDEX® 50WP MITICIDE	
1984 Actual Carryover Inventory	156
1985 Purchases	7,296
Total Available for Sale in 1985	7,452
Less 1985 Actual Carryover Inventory	1,344
1985 Net Sales	6,108
1986 Estimated Net Sales	8,000
1986 Estimated Purchases from Shell	6,656

PRODUCT:	
1984 Actual Carryover Inventory	
1985 Purchases	
Total Available for Sale in 1985	
Less 1985 Actual Carryover Inventory	
1985 Net Sales	
1986 Estimated Net Sales	
1986 Estimated Purchases from Shell	

* * *

[Shell letterhead omitted]

SHELL ATRAZINE (BULK PRODUCT)
Distributor Price Schedule
ISSUED: 2/11/86
SUPERSEDES: 11/18/85

PRICES FOR THE UNITED STATES
(Except Alaska and Hawaii)

Effective February 4, 1986, and extending until further notice, the following prices (F.O.B. destination) will apply on Shell Atrazine Herbicide:

	QUANTITY	PER GALLON
Shell Atrazine 4L-8	TT (Tank Truck)	$7.05

TERMS AND CONDITIONS

1. Prices – exclusive of any applicable sales and other excise taxes, and same will be added to such prices.
2. Terms – Due net 30 days, except:
   a. All 1985 protected inventory due 12/15/85 at 1985 truckload list price as issued on 11/1/84 Distributor Price Schedule or payable at the distributor's option 1/10/86 at 1986 truckload list price with 3.5 percent discount, net due 1/11/86.
   b. Deliveries in the following time periods are eligible for the indicated discounts if paid by the cash discount due date.

DELIVERY DATES	CASH DISCOUNT AND DUE DATES			
	4/10/86	5/10/86	6/10/86	NET DUE
11/1/85 - 3/31/86*	3.5%	2.5%	1.5%	6/11/86
4/1/86 - 4/30/86		2.5%	1.5%	6/11/86
5/1/86 - 5/31/86			1.5%	6/11/86
6/1/86 - Later	Net 30 days			

Note: Orders must be placed two weeks prior to the end of a delivery period in order to insure delivery, thus qualifying for applicable cash discounts.

*Shipments will be allowed from 12/15/85 to 2/28/86, conditions permitting.

The cash discount in effect at the time of invoice payment may be deducted from the invoice amount.

In those instances where a shipment is delayed due to lack of supply, the discount dates will be adjusted to allow the appropriate discounts as if the shipment had been made on time.

Shell reserves the right to allocate deliveries as Shell deems fit in the event orders exceed supply capability. In the event Shell must allocate deliveries, the discount date will be the date of actual delivery to the customer.

3. Finance Charge – A finance charge of up to 2 percent per month, or the highest rate allowed by law, whichever is less, will be imposed on all past due balances.
4. Inventory Protection – Inventory protection is provided for up to 12 percent of the total dollar amount of Shell Atrazine and BLADEX® Herbicide

purchases between November 15, 1985 and May 31, 1986, excluding 1985 rebilled carryover inventory. Shell will issue a check, to be received by the distributor no later than June 30, 1986. No check will be issued for less than $5,000.

Inventories are to be reported by August 15, 1986. If inventories are not reported by August 15, 1986, the distributor will be invoiced for the dollar amount – 12 percent of eligible purchases – previously paid under this inventory protection program and will be due 10 days from date of invoice. Shell reserves the right to verify all inventories.

In order to qualify for inventory protection, the following conditions must be met:

a. Distributor's account must be current as of June 11, 1986.

b. All eligible inventories are subject to verification at Shell's sole option. Inventories claimed at retail dealer locations must be supported with a copy of the distributor's actual rebilling invoice of the dealers inventory. If a distributor's reported inventory value is less than 12 percent of purchases, the distributor will receive an invoice for the difference which will be payable upon receipt.

c. Distributor or Dealer, whichever is appropriate, shall retain title and assume all the risk of loss and expense incurred in warehousing, storage, selling, and transporting products covered by this program.

   On November 15, 1986, the distributor will be invoiced for the dollar amount of inventory

refunded by Shell. The resulting invoice will be due net on December 15, 1986.

5. Delivery Quantities

   Tank Truck Deliveries (TT) – Orders for at least 4,600 gallons to a single destination by common carrier.

   LTT Deliveries – On orders of less than 4,600 gallons or more than one drop, $75 per ship-to location will be added to the invoice. Minimum order/drop – 1,000 gallons per location by common carrier only. Delivery of a 1,000 gallon order/drop will be dependent on Shell's ability to combine this order/drop with others totaling 2,000 gallons or more.

6. Shrinkage – Single and multiple destination deliveries by common carrier will be allowed 0.5 percent on a weight basis for shrinkage that may occur at time of unloading. The shrinkage allowance will be deducted off the billing invoice.

7. Billing

   a. One Drop Deliveries – Delivered amounts of Shell Atrazine 4L-B will be calculated from certified weight tickets obtained at the El Paso Plant.

   b. Multiple Drops by Common Carrier – Distributors will be invoiced for gallons based on the certified weight tickets obtained at the El Paso Plant. Deliveries will continue to be weighed at destination.

      Net weights will be converted to gallons using a factor of 9.26 pounds per gallon or the proper factor should be temperatures change, thus affecting bulk density.

8. Shell Atrazine 4L-B Unloading Policy – There will be no charge assessed to common carrier tank truck shipments unloaded within two hours after arrival at each destination location. After two hours, unloading charges based on the tariff will be for the distributor's account.
9. D.O.T. Classification – None.
10. Bill of Lading Description – Weed killing compounds, N.O.I.

* * *

[Shell letterhead omitted]

SHELL BULK HERBICIDES
CUSTOMER PICK UP INFORMATION

1. Ordering * * *

2. Destination Tank Inspection * * *

3. Scheduling * * *

4. Bulk Loading Hours * * *

5. Shell Equipment Inspection * * *

PLEASE NOTE SHELL RESERVES THE RIGHT TO REJECT ANY EQUIPMENT THAT IT BELIEVES TO BE UNSUITABLE FOR HANDLING AND HAULING SHELL HERBICIDES. THE DRIVER WILL BE ASKED TO REMOVE REJECTED EQUIPMENT FROM THE PREMISES UNTIL SPECIFIED PROBLEMS ARE CORRECTED.

* * *

[Shell letterhead omitted]

PYDRIN INSECTICIDE 2.4 LC

DISTRIBUTOR PRICE SCHEDULE

ISSUED: 6/20/86
SUPERSEDES: 2/10/86

PRICES FOR THE CONTINENTAL UNITED STATES

Effective June 20, 1986, and extending until further notice, the following prices will apply to PYDRIN 2.4 EC Insecticide.

Container	Pounds Gross Container Weight	Gallons Per Pallet	Price FOB Destination
1 - Quart	24.0	112.5	$ 21.70/qt
(6 X 1 per case	lb/case		$ 130.20/case
1-Quart	18.7	120	$ 21.70/qt
(8 X 1 per case)	lb/case		$ 173.60/case
1 - Gallon	36.3	192	$ 86.40/gal
(4 X 1 per case)	lb/case		$ 345.60/case
5 - Gallon	45.0 lb/ container	165	$ 86.40/gal $ 432.00/5 gal
30 - Gallon	271.0 lb/drum		$ 82.20/gal $ 2,556.00/drum

TERMS AND CONDITIONS:

* * *

7. SHRINKAGE ALLOWANCE – A 1% shrinkage allowance will be given off invoice for purchase of 30 gallon drums.

* * *

[Shell letterhead omitted]

PAY-OFF 2.5 EC INSECTICIDE

DISTRIBUTOR PRICE SCHEDULE

ISSUED: 6/20/86
SUPERSEDES: 4/3/86

PRICES FOR THE CONTINENTAL UNITED STATES

Effective June 20, 1986, and extending until further notice, the following prices will apply to PAY-OFF 2.5 EC Insecticide.

Container	Pounds Gross Container Weight	Gallons Per Pallet	Price FOB Destination
1 - Quart	10.48	75	$ 56.75/qt
(4 X 1 per case)	lb/case		$ 227.00/case
1 – Gallon	41.25	72	$ 225.00/gal
(4 X 1 per case)	lb/case		$ 900.00/case
30 – Gallon			$ 222.00/gal
			$ 6,660.00/drum

TERMS AND CONDITIONS:

1. PRICE – Price is exclusive of any applicable sales and other excise taxes and the same will be added to such price.
2. FREIGHT ALLOWANCE – Distributor pickups will be allowed $.50/gallon. Responsibility for, and title to the product pass to the customers upon

taking possession at the time of pick-up.

3. TERMS – Payment due October 1, 1986 on any product purchased from June 20, 1986, through September 1, 1986. Purchases after September 1, 1986, terms are net due of second month proximo (60 days from end of month invoiced). No cash discount for early payment will be offered.
4. FINANCE CHARGE – A finance charge of up to 7% per month, or the highest rate allowed by law, whichever is less, will be imposed on all past due balances.
5. MINIMUM DELIVERY QUANTITY – Minimum delivery quantity is one pallet per container size and one 30 gallon drum. Deliveries of product above the minimum will be in full pallets only.
6. INVENTORY PROTECTION – 100% of purchases made between January 1, 1986 and September 30, 1986 and remaining in inventory on September 30, 1986 may be returned (full pallets only) to nearest Shell Warehouse or rebilled. Distributors will be invoiced for the net amount with payment due on July 10, 1987. Prices and conditions that apply on the date of invoicing will apply to the rebilled inventory. A special freight, handling and storage allowance of $.75 per gallon will be allowed on rebilled product.
7. SHRINKAGE ALLOWANCE – A 1% shrinkage allowance will be given off invoice for purchase of 30 gallon drums.

JA-505

[Trial Exhibit 1087]

D-D® SOIL FUMIGANT INSPECTION SUMMARY

BROWN & BRYANT

Arvin, California

During the brief inspection of the customer's D-D Soil Fumigant storage and handling operations, we observed a number of conditions which do not meet the requirements suggested in the Shell D-D Soil Fumigant Handling and Safety Manual. Specific items which were observed and to which further attention is suggested include:

1. Greater emphasis should be placed on the personnel safety program. Each service man should be instructed in the use of, and have access to, the required safety equipment. Preferably, each service man should have a personal issue of the more intimate safety items.
2. There is no evidence that the storage tank is of a code design or has a frangible roof-to-shell joint. The existance of such a joint should be verified or an emergency relief device provided. One suggested method to satisfy this requirement is to revise the roof manhole cover so it can lift on overpressure.
3. The 2" open breather vent is too small and is not fitted with flame arrester protection, as required by NFPA-30. Shell recommends the use of an appropriately sized closed type pressure/vacuum relief without a flame arrester. The RV/VB could be installed on the roof manhole cover. This revision, along with the emergency relief protection, could be accommodated without a tank outage.

4. The tank and all transfer equipment must be grounded to bleed off any static charge.
5. The plastic tubing used for tank level indication is very effective but susceptible to damage. A float type or possibly a bubbler type level indicator is preferred.
6. Product transfers are not being made through use of a closed system as per state regulation.
7. All valves communicating with the tank liquid zone should be of a fire safe design and locked closed when not in use.
8. The design of the proposed impoundment basin should include a basin liner and a sealed transfer system that will minimize any soil penetration by D-D or other agricultural chemicals. Shell would prefer to see a dike enclosure around the D-D tank for complete containment of any spill.

The above items along with several other minor conditions were discussed with Jack Brown of Brown & Bryant and John Mitchell of Shell following the inspection.

The discussion included a review of the previously issued Shell D-D Soil Fumigant Handling & Safety Manual which covers or makes reference to all requirements for the handling and safe storage of D-D. While there is no one item sufficiently serious to require immediate attention, it would be prudent to correct the noted items at the earliest convenience. While no warranty is expressed or implied, these suggestions and recommendations represent our approach to what we believe to be reasonably safe facilities.

RWS:tj
1/31/80

[Trial Exhibit 1088]

[Shell logo omitted] February 19, 1980

[Date received stamp omitted]

[Distribution list omitted]

FROM: R. W. SWAIN - MECHANICAL EQUIPMENT – ENGINEERING SERVICES - ENGINEERING PRODUCTS

TO: MANAGER - CHEMICAL PRODUCTS - AGRIBUSINESS PRODUCT SALES - IN&M

SUBJECT: TECHNICAL AUDIT OF D-D® SOIL FUMIGANT BULK HANDLING FACILITIES

The attached final check-lists supersede and replace the preliminary draft issued to the customer at the time of the inspection. Such preliminary drafts should no longer be used.

As previously issued, these check-list cover the second of a series of inspections on a pilot program designed to provide guidance to customers with regard to their D-D Soil Fumigant bulk handling facilities. These inspections are in the form of a technical audit in which the customer's facilities are inspected and then reviewed with him for compliance with the Shell D-D Soil Fumigant Handling and Safety Manual. The check-list is used for this purpose. Of the several conditions observed, further attention should be directed to those noted on the inspection summary. The check-list and inspection summary have been

prepared in a form so they could be forwarded to the customer should you care to do so.

The second inspections covered the customers locations as noted below:

Valley Nitrogen Procedures - AFC Division
Edison, California

Brown & Bryant
Arvin, California

Southern Valley Chemical Company
Arvin, California

Occidental Chemical Company
Arvin, California

Brea Agricultural Services
Heber, California

Western Farm Services, Inc.
Imperial, California

Drewry Chemical Company
Imperial, California
(For discussion only on their proposed soil fumigant bulk handling facilities)

[Handwritten note omitted]

This series of inspections found that not one of the customers visited had a totally satisfactory spill containment system. Several installations had no spill containment provisions whatsoever.

The use of a closed transfer and/or mixing system, per state regulations, was not found. Essentially all operators were aware of these regulations but since they have never been enforced they haven't bothered to comply.

With few exceptions, safety provisions are inadequate. There are doubts as to whether any of the installations would fully comply with state safety regulations.

Location and specific problems are noted on each inspection summary and checklist.

/s/ R. W. Swain
R. W. Swain

RWS:tj

Attachments

cc: Agricultural Chemical Business Center - Mr. J. E. Anderson
Operations - Distribution Facilities & Services - Mr. J. W. Bodenheimer
Chemical Products - Agribusiness Product Sales - IN&M - Mr. W. H. Haverland
Engineering - Products - Mechanical Equipment - Mr. M. A. Hymel
Plans & Analysis - Manager - Chemical – Mr. E. G. Johnson

[Trial Exhibit 1119]

[Logo omitted]

D-D® Soil Fumigant
Handling and Safety
Manual

* * *

[Logo omitted]

SHELL CHEMICAL COMPANY
A DIVISION OF SHELL OIL COMPANY

P.O. Box 3871
One Shell Plaza
Houston, Texas 77001

August 4, 1978

Gentlemen:

Handling and storage of pesticides have always called for the utmost in care and consideration. The enactment of numerous laws and regulations, not only from the EPA, but also from OSHA, DOT and state and local governments, has made this task increasingly complex for all of us. We have always been concerned that our products are used only in accordance with proper instructions and regulations. The attached "D-D(R) Soil Fumigant Handling and Safety Manual" is our best effort to tie many of the regulations and safety considerations together and give you our interpretation of what they mean. Of course, you will

also want to review these regulations and make your own interpretations of such matters.

You will notice that we have included a special section on California Regulatory Requirements because we think they are especially noteworthy and may be adopted by other states. Read this manual carefully, make it available to your employees, customers, and farmer/applicators, and enact the recommendations at your storage points. Shell is willing to assist you technically and financially in accomplishing this.

While this manual represents our best information to date, things are constantly changing. If you have specific questions not fully explained in this manual, I encourage you to contact your nearest Shell Agricultural Chemical District Office as shown in the introduction. We feel that the safe handling of our products is a responsibility of good citizenship and can go a long way in preventing criticism from the opponents of agricultural chemical tools.

Sincerely,

/s/ J. H. Hawke
J. H. Hawke
Product Sales Manager
Agribusiness Sales

* * *

JA-513

D-D® SOIL FUMIGANT HANDLING AND SAFETY MANUAL

INDEX

Section I — Safety Guide

- A. Product Information
- B. Safety Precautions/Safe Handling
- C. Emergency Procedures
- D. Poisoning Symptoms/Medical

Section II — Transportation and Storage

- A. Transport/Carrier Information
- B. Bulk Storage and Handling
- C. Drum Storage and Handling
- D. Field Transfers
- E. Tank Cleaning

Section III — Regulations

- A. D.O.T.
- B. E.P.A./F.I.F.R.A.
- C. O.S.H.A.
- D. California Regulatory Requirements

Section IV — End Use Label

* * *

JA-514

SECTION I

SAFETY GUIDE

D-D® Soil Fumigant is a hazardous material that requires special precautions in all phases of its handling. Section I details the necessary precautions, provides basic product information and Shell's latest information on how to work safely with D-D. Additionally, information is provided on how to handle emergency situations and accidental human exposure.

CONTENTS

A. Product Information—Includes Basic Data Sheet and Material Safety Data Sheet.

B. Safety Precautions—Includes Precautionary Information on personal exposure, materials, storage, fire, and general handling precautions.

C. Emergency Procedures—Includes emergency telephone number, and procedures on handling leakers, fires, wrecks, cleanup and decontamination, and recommended personal protection devices.

D. Poisoning Symptoms/Medical—Information is provided on poisoning symptoms and first aid. Physician and medical information is included.

* * *

JA-515

D-D®

SAFETY PRECAUTIONS

While safety is primarily the responsibility of each individual trained to work with D-D®, certified applicators and everyone in a supervisory capacity should be especially familiar with the safety recommendations for this fumigant and must always be alert to correct any deviations from safe procedures.

PERSONAL HYGIENE

The following precautions should be observed by individuals working with D-D:

Read, understand and observe the warning statements on all product labels. Preplan your operations to avoid exposure.

Maintain good personal hygiene. After handling or applying D-D, always wash the hands, arms and face thoroughly with soap and water. Also do this before smoking, chewing gum, eating, etc.

AVOID CONTACT WITH D-D

Eyes — Wear eye protection such as chemical worker's goggles to prevent eye contact when handling D-D. If D-D gets into the eyes, flush them immediately with running water for a minimum of 15 minutes, and SEE A PHYSICIAN PROMPTLY.

Skin—When handling or working with D-D, wear clean body clothing including polyethylene or neoprene gloves and heavy polyethylene, rubber or neoprene footwear. Never wear clothing or footwear having the odor of D-D. Wash all protective clothing with soap and water after each use.

NOTE: Leather shoes should not be used without protective covering such as neoprene boots, as leather cannot be decontaminated. Destroy footwear and other leather articles contaminated with D-D.

If clothing becomes contaminated with D-D, or if D-D comes in contact with the skin, stop work immediately, remove contaminated clothing, and thoroughly wash exposed skin areas with water, or soap and water if available. Wash all contaminated clothing thoroughly before reuse. Destroy leather goods.

NOTE: Contaminated clothing may be a fire hazard until cleaned or completely dry.

DO NOT SWALLOW ANY D-D

Never put D-D into the mouth. Do not use the mouth to siphon liquids from containers or to blow out clogged lines, nozzles, etc.

DO NOT BREATHE THE VAPOR

NIOSH approved respiratory protection should be worn when D-D liquid soil fumigant is exposed to the atmosphere or when conducting operations which vent to the atmosphere, (i.e., other than closed systems. Note: Observe all state and local regulations regarding closed system requirements). These situations include loading and unloading tank cars, tank trucks, and marine vessels; filling drums and other similar containers; when exposed to small spills and cleaning up small spills or cleaning equipment. During normal field application of D-D, respiratory protection should be worn when calibrating and during filling operations but is not required when chisels are in the ground and

the equipment is sealing chisel channels.

NOTE: Excessive airborne levels of D-D may develop inside the enclosed cab of an application rig unless an uncontaminated air supply is provided.

All devices for respiratory protection have limitations on the range of compounds against which they are effective, the length of time they can be relied upon for protection, and the conditions under which they can be used and stored. Therefore, all such equipment should be used in strict accordance with its manufacturer's directions.

Selection of the proper type of respirator for protection against D-D should be based on the airborne levels of D-D encountered. Consult the D-D label in Section IV under "Precautionary Statements" for information on requirements.

Airborne Concentration	Respirator
Up to 10 ppm	Chemical cartridge respirator with organic vapor cartridge or pesticide respirator.
Up to 50 ppm	Full face cartridge respirator with organic vapor or pesticide cartridges or organic vapor or pesticide gas mask.
Up to 1,000 ppm	Type C supplied air respirator in positive pressure or continuous flow mode.
Major spill, fire fighting, confined	Self-contained breathing apparatus in pressure-demand

space entry	mode or Combination supplied air-respirator in pressure-demand mode with an auxiliary self-contained egress bottle.

All respirators should be NIOSH approved. Consult a safety equipment supplier or manufacturer for approved equipment.

NOTE: OSHA standards contain detailed requirements for respirator use, including: selection and fit; written operating instructions; training for users; inspection and maintenance of equipment; and medical criteria for users. See Section III C for further information.

NOTE: Before wearing respirator for the first time, have your supervisor explain how it is used and how to wear it correctly. Follow all OSHA rules and regulations regarding respiratory protection.

1. Make sure all parts are present and in good working order and that valves, and cartridges are properly positioned and sealed.

2. Fit respirator on face with headbands snug enough to ensure a tight but comfortable seal. For a half-mask respirator, top headbands must be above the ears and the lower bands snug for a good seal. If the operator has corrective glasses or a beard, care should be taken to insure that they do not affect the seal of the facepiece. Corrective lens kits are available for use in full face mask respirators. Proper

selection of equipment will minimize or avoid this problem. It is also important to know that no single brand or style of respirator will fit all individuals.

3. Test for leakage by placing the hand over the breathing hose or cartridge inlet(s) and inhaling gently. If facepiece is pulled toward your face, the fit is good. If not, readjust headbands and test again.

4. It is recommended that canisters and cartridges be replaced after eight hours of use or sooner if recommended by manufacturer or if D-D odor is detected inside the mask.

5. Remove used canisters and cartridges and destroy. Respirators shall be regularly cleaned as per OSHA regulations. Wash the facepiece with soap and warm water after each use. After washing, rinse thoroughly to remove all traces of soap. Place the facepiece in a well-ventilated clean area to dry.

6. Store the respirator and canisters or cartridges in a clean, dry place, preferably in a tightly closed paper or plastic bag. Replace worn or faulty parts immediately.

7. Do not do any job that requires a respirator if you have a medical or physical condition that prevents you from properly wearing or using a respirator to perform the job safely. Consult with your supervisor. OSHA standards prohibit wearing contact lenses in an atmosphere where a respirator is required.

WARNING: Never use a cartridge respirator, gas

mask, or airline respirator without carefully assessing exposure conditions. Do not use in any atmosphere where you could not safely escape if the respirator failed. The atmosphere must contain adequate oxygen (at least 19.5%). If in doubt, use a self-contained breathing apparatus. Because of the possibility of inadequate oxygen, CARTRIDGE OR CANISTER RESPIRATORS SHOULD NOT BE USED FOR FIRE FIGHTING; USE SELF-CONTAINED BREATHING APPARATUS.

ENVIRONMENTAL SANITATION

Read the product label carefully, and comply with all the use precautions and warning statements on the label.

Keep all persons whose presence is not required away from areas where D-D is being stored or loaded, or areas being treated or very recently treated with D-D.

Minimize contamination of all working-areas, including the sites of mixing or loading operations and the floors of railroad cars and trucks which may become contaminated. It is recommended that plant floors be washed with a detergent solution routinely as a part of regular plant maintenance.

Areas and equipment where spillage or leakage has occurred must be cleaned and decontaminated as soon as possible. Decontamination should be done only by properly protected and knowledgeable people. Absorb any large excess of D-D with clay or other

noncombustible absorbent material. Collect and bury material; decontaminate by washing with a strong detergent solution; flush with plenty of water. Follow the local, State, and Federal regulations for disposal of washings and soiled materials. **Do not flush to public sewers or water courses.** NOTE: Contaminated materials may be a fire hazard as D-D is flammable.

If kerosene or fuel oil is used in flushing plant or equipment, the flushings must be disposed of in a way that will not jeopardize fish, wildlife, wells or other potable water supplies. Follow local, State, and Federal regulations.

Do not leave contaminated areas, equipment, or containers unguarded.

VENTILATION

All trnsferring or repackaging of D-D should be done in an easily cleaned, well-ventilated area with explosion proof equipment, preferably well separated from other operations.

The formulating or repackaging area in a plant should be equipped with an adequate local exhaust ventilating system. Contact Shell Chemical Company for information.

EQUIPMENT

Hazardous decomposition may occur with release of hydrogen chloride when D-D comes into contact with aluminum and its alloys. Some slow decomposition has been observed with the use of zinc, magnesium and cadmium. Avoid their use.

After using, thoroughly wash all equipment with kerosene or fuel oil. This is to help prevent corrosion

as well as to eliminate a contact hazard. Follow local, State and Federal regulations when disposing of washings.

CONTAINERS AND STORAGE

Do not reuse D-D containers. Empty used disposable shipping containers as completely as possible. Rinse thoroughly with water, drain completely, and aerate until no odor is detected. Do not puncture drum to prevent reuse until all of the D-D has been removed in order to avoid possible ignition of fumigant vapors.

Dispose of empty D-D containers and washings in accordance with applicable local, State, and Federal regulations covering disposal of pesticides and containers.

Place unused D-D in tightly closed, properly labeled original containers and store containers in a cool place inaccessible to animals or unsuspecting humans, for example children. Do not store D-D near water sources or foodstuffs, seeds, fertilizers, or plants. **Never store D-D or any other pesticide in empty food or beverage containers.**

Do not store D-D in containers made of aluminum, magnesium or alloys of these metals.

Never weld, or apply a torch, or other source of heat to cut open drums or bulk tanks. D-D and its fumes can be flammable or explosive under these conditions. For additional information on Bulk Storage see Section II B, for Drum Storage see Section II C.

FIRE PRECAUTIONS

D-D Soil Fumigant is classified as a flammable

liquid by government regulations, and fire precautions for this class of chemicals should be observed.

Do not use, pour, spill or store D-D near heat or open flame, and do not flame-cut or weld empty D.D. drums.

SAFE HANDLING GUIDELINES

Safe handling of D-D requires a thorough knowledge of the properties of the material, adequate equipment designs and the development of work practices and procedures which control all hazardous aspects. The following guidelines are provided to help accomplish this:

Personnel Education

Workers handling D-D must be thoroughly educated as to its hazards and specific instructions established as to necessary personal protective equipment required for each particular type of job. Safety equipment should be readily available, properly maintained and the worker adequately trained in use procedures if exposure occurs, but emphasis should be on *preventing* the exposure—not reacting to it.

Personal Hygiene Practices

Good practice calls for personnel to shower and change clothes daily after working with any pesticide, including D-D even if no known exposure has occurred. Shower and change facilities near the work site are recommended, if possible, to facilitate this. Such showers, of course, are in addition to emergency eye-bath and shower stations strategically located in the work area or adequate field wash facilities.

Equipment Condition and Housekeeping

Periodic inspections and preventive maintenance programs should be established to keep equipment and storage in first-class condition to prevent leaks of liquid and vapors. Drums must be new. Other containers used to handle D-D should be new or in excellent condition. Leaks or spills that may occur should be cleaned up immediately and properly disposed of to minimize prolonged exposure hazards from product contact and air contamination.

Equipment Design

Basic equipment design should be approached considering product properties (toxicity, flammability, corrosivity, etc.) and specific operating conditions (temperature, pressure, volume, etc.). See Section II B for storage equipment recommendations.

Maintenance Procedures

Craftsmen who work on D-D equipment must be knowledgeable of product hazards, use of safety equipment and emergency procedures. Required safety equipment should be specified for each job and used until equipment and work area have been adequately cleared. Since D-D is flammable, no spark producing, flame cutting, or welding operations should be done on equipment or in areas around equipment until proper isolation, clearing and testing with an approved combustible gas meter has established that safe conditions exist. Vessel entry by personnel should be avoided. If entry must be made, it should only be done under strict procedures established and supervised by knowledgeable personnel experienced in this type of operation.

Emergency Planning

No matter how comprehensive the design of a facility, the training of personnel and the design of operating procedures, careful consideration must be given to emergencies. Plans should be made for both minor and major emergencies and cover such situations as injuries, personnel exposures, spills, vapor releases, fires and the like. Emergency procedures should be committed to written form and regularly reviewed with workers to assure their familiarity if an emergency arises.

Section : B

D-D® SOIL FUMIGANT SAFETY PRECAUTIONS

The safety precautions that follow must be observed to protect humans and the environment. While safety is primarily the responsibility of each individual working with D-D, everyone in a supervisory capacity should be especially familiar with the safety recommendations for this fumigant and should always be alert to correct any deviations from safe practice.

PERSONAL PRECAUTIONS

The following precautions should be observed by all individuals working with D-D in an open system:

General

1. Read (and heed!) all precautionary statements on the label before use.
2. Never work alone.
3. Preplan your operations to avoid exposure. Take recommended precautions and wear the appropriate protective equipment to avoid contact with and inhalation of D-D.
4. If you feel sick when working with D-D, stop work and get medical attention.

Avoid Contact with D-D

1. D-D vapor is irritating to the eyes. D-D liquid can be severely irritating. Wear eye protection, such as chemical worker's goggles, to protect the eyes. If D-D gets into the eyes, immediately flush them with running water for

15 minutes. Get medical attention.

2. D-D is irritating to the skin (the liquid can be severely irritating). D-D is absorbed through the skin. When handling or working with D-D, wear clean body covering, including polyethylene, neoprene, or milled nitrile gloves. Replace gloves frequently and discard them to prevent reuse. Plastic- or PVC-coated knitted gloves with 12-inch cuffs offer good protection. Also wear heavy (greater than 3 mil thickness) polyethylene, neoprene, or rubber footwear. Never wear clothing or shoes contaminated with or having the garlic-like odor of D-D. Wash all protective clothing with soap and water after use.

NOTE: Leather shoes should not be worn without the above protective clothing because leather cannot be adequately decontaminated. Destroy footwear and other leather articles contaminated with D-D.

3. If clothing becomes heavily contaminated with D-D, or if D-D comes in contact with the skin, stop work immediately, remove contaminated clothing and flush exposed areas thoroughly with plenty of water. Then wash skin with soap and water. Get medical attention. Wash contaminated clothing thoroughly before reuse.

Do Not Swallow Any D-D

1. Always wash hands and face with soap and water before eating, drinking or smoking. Do not eat or smoke while working with D-D.

2. Never put D-D into the mouth. Do not use the

mouth to siphon liquids from containers or blow out clogged lines, nozzles, etc.

Do Not Inhale D-D

1. D-D is volatile and is irritating to the respiratory tract. NIOSH-approved respiratory protection should be worn any time liquid D-D is exposed to the atmosphere or when conducting transferring operations which vent to the atmosphere. These situations include loading and unloading tank cars, tank trucks and marine vessels, in cleaning up accidental spills, or in cleaning equipment. (See Respiratory Protective Devices Section, page .)

2. Agricultural tractor drivers should wear approved respiratory protection during application, calibration, and filling operations. In addition, those who operate within a closed cab of an application rig should be provided with an uncontaminated air supply because excessive airborne levels of D-D may be encountered.

3. For further respiratory information, refer to the following sections of this manual:

   A. Section I C, see Respiratory Protective Devices.
   B. D-D label. Section IV, see Precautionary Statements.
   C. OSHA regulations, Section III C.

4. Remember that the use of respirators does not lessen the importance of carefully heeding all other precautions recommended for the safe

handling of pesticides, including D-D.

Precautions in Applying D-D

In addition to the preceding general precautions to be observed by all those who handle D-D, applicators (and helpers) should heed the following:

1. Follow all applicable state and federal regulations concerning agricultural nematode control operations. Comply with any state laws requiring the use of closed transferring systems with D-D.
2. Apply D-D only in accordance with label recommendations. Note especially the application rates and pre-planting intervals specified.
3. Be sure that all persons involved are advised of the flammability and moderate toxicity of D-D, and precautions to be observed as printed on the label.
4. Wear protective clothing and an approved respirator as described in the preceding sections. Wear goggles or a full-face respirator to protect the eyes.
5. Keep D-D out streams, lakes, and ponds. Do not contaminate water bodies by the cleaning of equipment or disposal of wastes.
6. Rinse and dispose of emptied D-D containers as described in the section Pesticide and Container Storage and Disposal, page .

ENVIRONMENTAL PRECAUTIONS

In addition to practicing good personal hygiene, D-

D users should maintain a clean environment for others by observing the following precautions.

General

1. Keep children and other unauthorized persons away from:

   A. Working areas where D-D is being loaded or applied.

   B. Areas in which D-D is stored.

   C. Areas where D-D has been spilled.

2. Package D-D in an easily cleaned, well-ventilated area, preferably well-separated from other operations.

3. Prevent, minimize, or eliminate contamination of all working areas, including the sites of loading operations and the floors of railroad cars and trucks. It is recommended that plant floors be cleaned routinely as a part of regular plant maintenance.

   Areas and equipment subjected to spillage or leakage must be promptly cleaned up and decontaminated. Absorb any large excess with clay or other absorbent material. Refer to Cleanup and Decontamination, Section I C, for further instructions.

   After use, always empty and clean equipment thoroughly with kerosene or fuel oil. Avoid using water in equipment. Waste solution must be disposed of at a hazardous waste disposal site. Keep D-D and rinsates out of sanitary and storm sewers.

Pesticide and Container Storage and Disposal (Drums)

1. Store D-D in a dry, locked area, well away from sunlight, water, feed, or foodstuffs and inaccessible to animals or unsuspecting humans--for example, children. Keep away from neat and open flame. Never weld or apply a torch to containers; see Fire Precautions section, page .

2. Keep any leftover or unused D-D tightly sealed in original container and store it like the unopened product (see item No. 1).

NEVER PUT OR STORE PESTICIDES IN EMPTY FOOD OR BEVERAGE CONTAINERS. Tragic poisonings can result from this unsafe practice.

3. Rinse and drain emptied D-D drums at the point of use as follows, taking precautions to avoid contact with the pesticide.

A. Fill the drum with 11 gallons (1/5 of container volume) of kerosene. Replace the closure and agitate. Drain rinsate from container. Allow 30 seconds for drainage after normal emptying.

B. Rinse at least two more times with a detergent solution. Fill, agitate, and drain as in (A) above.

C. If kerosene is not available for the first rinse, use a strong detergent solution for all three rinses.

D. See No. 7 for instructions on disposal of rinsates.

4. For storage, cleaning and disposal procedures that pertain to tanks containing D-D in bulk, refer to Sections II B and II [illegible]

5. Dispose of emptied containers in accordance with local, state, and federal regulations governing container disposal, preferably at a waste disposal site (landfill) approved for such use.

6. DO NOT ABANDON EMPTY D-D CONTAINERS. If they cannot be disposed of immediately, collect the empty containers and store them in a locked, sign-posted enclosure.

7. Soil Fumigant or rinsate that cannot be used should be disposed of in accordance with local, state, and federal regulations, or at a hazardous waste disposal site approved for D-D (dichloropropenes/ dichloropropanes).

Equipment

1. Hazardous decomposition may occur with release of hydrogen chloride gas when D-D comes in contact with aluminum and its alloys. Some slow decomposition has been observed with the use of zinc, magnesium, and cadmium. AVOID THEIR USE.

2. D-D cannot be processed or applied safely with substandard or faulty equipment. All processing, packaging, and application equipment must be kept in good operating condition and free from leaks at seams, nozzles, couplings, packing glands, valves, points of closure, hose connections, shut-offs, etc.

3. After use, thoroughly clean and decontaminate equipment to eliminate any hazard to humans and animals from residual soil fumigant. (Refer to Cleanup and Decontamination section, page .)

Ventilation

The manufacturing or packaging area in a plant should be equipped with a properly designed local exhaust ventilation system that will adequately control all sources of vapor to below the recommended exposure limit (see below). The ventilating system must remove the contaminated air from the workplace and must not create a hazard in the surrounding area. A general room ventilating system (dilution ventilation) by itself would not meet proper control requirements.

OCCUPATIONAL EXPOSURE LIMITS

No permissible exposure limit (PEL: Occupational Safety and Health Administration) or 1980 threshold limit value (TLV: American Conference of Governmental Industrial Hygienists) has been established for occupational exposure to D-D. However, Shell has an 8-hour time weighted average (TWA) internal standard of 1 part per million (ppm) for D-D exposure. Peaks of [illegible] ppm are permissible for a maximum of 15 minutes

FIRE PRECAUTIONS

D-D is classified as a flammable liquid by government regulations. Safety precautions pertaining to flammable liquids should be observed.

Do not use, pour or store D-D near heat and open flame. Never flame cut or weld empty D-D drums.

SAFE HANDLING GUIDELINES

Safe handling of D-D requires a thorough knowledge of the properties of the material, adequate equipment designs, and the development of work practices and procedures which control all hazardous aspects. The following guidelines are provided to help accomplish this:

Personnel Education

Workers handling D-D must be thoroughly educated as to its hazards and specific instructions established as to necessary personal protective equipment required for each particular type of job. Safety equipment should be readily available, properly maintained, and the worker adequately trained in use procedures if exposure occurs, but emphasis should be on preventing the exposure - not reacting to it.

Personal Hygiene Practices

Good practice calls for personnel to shower and change clothes daily after working with any pesticide, including D-D, even if no exposure has occurred. Shower and change facilities near the work site are recommended, if possible, to facilitate this. Such showers, of course, are in addition to emergency eye-bath and shower stations strategically located in the work area.

Equipment Condition and Housekeeping

Periodic inspections and preventive maintenance programs should be established to keep equipment and storage in first-class condition to prevent leaks of liquid

and vapors. Drums must be new. Other containers used to handle D-D should be new or in excellent condition. Leaks or spills that may occur should be cleaned up immediately and properly disposed of to minimize prolonged exposure hazards from product contact and air contamination.

Equipment Design

Basic equipment design should be approached considering product properties (toxicity, flammability, corrosivity, etc.) and specific operating conditions (temperature, pressure, volume, etc.). See Section II B for storage equipment recommendations.

Maintenance Procedures

Craftsmen who work on D-D equipment must be knowledgeable of product hazards, use of safety equipment, and emergency procedures. Required safety equipment should be specified for each job and used until equipment and work area have been adequately cleared. Since D-D is flammable, no spark-producing, flame-cutting, or welding operations should be done on equipment or in areas around equipment until proper isolation, clearing, and testing with an approved combustible gas meter has established that safe conditions exist. Vessel entry by personnel should be avoided. If entry must be made, it should only be done under strict procedures established and supervised by knowledgeable personnel experienced in this type of operation.

Emergency Planning

No matter how comprehensive the design of a facility, the training of personnel, and the design of operating procedures, careful consideration must be given to

emergencies. Plans should be made for both minor and major emergencies and cover such situations as injuries, personnel exposure, spills, vapor releases, fires, etc. Emergency procedures should be committed to written form and regularly reviewed with workers to assure their familiarity if an emergency arises.

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D-D® SOIL FUMIGANT

EMERGENCY PROCEDURES

The procedures that follow are intended primarily for immediate, temporary control of emergencies involving D-D® Soil Fumigant. In all such cases, contact Shell Chemical Company by calling the following telephone number:

(618) 254-7331

You will be put in touch with Shell Chemical staff personnel who will provide advice and arrange for professional help as needed to cope with the emergency.

LEAKING CONTAINERS

Despite the best of packaging, there is always a possibility that a pail or drum of D-D may be damaged in handling or shipping. As D-D is frequently transported in bulk trucks or rail cars, accidents involving these vehicles could result in leakage of large quantities of D-D.

Upon discovery of a leaking container (leaker), do the following:

1. Isolate the area, and keep people away. Allow no smoking in the vicinity. Keep open flames or any other source of ignition out of the area.
2. If the leaker is indoors, evacuate and ventilate the area thoroughly to minimize fumes.
3. If anyone has been adversely affected by the leaked D-D, call a physician, and render first aid.
4 Invert or reposition the leaking container of D-D if

it can be done safely. Wear adequate respiratory protection to prevent inhalation of D-D vapor, and use necessary recommended impervious protective clothing to prevent skin contact.

5. Cover or confine the leak with a material such as diatomaceous earth, clay, sand, or other noncombustible material.

6. Contact Shell Chemical Company by calling the following telephone number:

   (618) 254-7331

   You will be put in touch with Shell Chemical staff personnel who will advise further steps to take and assist in arranging for professional help or assistance as needed.

FIRE

In any fire involving D-D, the following general rules apply:

1. Notify the fire department immediately. Identify D-D as well as other pesticides and other hazardous substances that might be involved.

2. Clear out all personnel to a safe distance, upwind from the smoke and fumes.

3. Fire fighters should wear full turn-out self-contained breathing apparatus for protection against both toxic fumes which may be generated and oxygen-deficient atmospheres. CAUTION: Respirators and gas mask canisters commonly used for protection against pesticides offer no protection against oxygen deficiency, and should not be used in fire fighting.

4. Use the same techniques and equipment to combat a D-D fire (water spray, CO_2, or dry chemical) which are appropriate for flammable liquids.
5. Keep pesticide containers cool, if possible, with a water spray. However, use only as much water as necessary because excess water compounds the problems of decontamination and cleanup.
6. Dike or trench around the area or otherwise keep contaminated water from reaching streams, water supplies and sanitary or storm sewers.
7. Contact Shell Chemical Company by calling the following telephone number:

   (618) 254-7331.

   You will be put in touch with Shell Chemical staff personnel who will provide advice and arrange for professional help or assistance as needed.

TRANSPORTATION EMERGENCIES

Vehicle wrecks or other transportation emergencies involving pesticides constitute special hazards because they usually occur where equipment and facilities for cleanup are not readily available and are usually on public highways. In the case of D-D, which is commonly transported in bulk, a wreck may involve spillage of a large amount of D-D, increasing the risk of hazardous exposure to the fumes or liquid.

In case of a vehicle wreck in which D-D (or any other Shell pesticide) is involved, these procedures are recommended:

1. Notify local police and fire departments and/or emergency crews (as well as the carrier).

2. Isolate the affected area or vehicle and keep people upwind and away. Only personnel with proper respiratory protective equipment and suitable protective clothing should be allowed into the area. Allow no smoking, open flames or other sources of ignition in the vicinity. **This includes flares.**

3. Get medical help for anyone adversely affected by the spilled pesticide. Render first aid until the victim is under the care of a physician or hospital.

4. Make every effort to keep pesticide spills or leaks from spreading, but in doing so, take great care to avoid contact with the pesticide.

NOTE: Quick action may be necessary to limit spread.

A. **If there is a spill or leak in the vehicle.** If the vehicle can be moved without spreading the contamination, move it to an area equipped with a pesticide sump and water supply. If moving the vehicle would create a hazard, on-the-spot cleanup and decontamination will have to be carried out. (see below)

CAUTION: Be very careful in assessing the extent of damage in any vehicle carrying pesticides. **If explosive concentrations of the vapors are detected, do not start vehicle engine.**

B. **If pesticide has spilled onto the roadway or ground.** Confine the spill as much as possible with a dike or dam of any available non-combustible material such as soil, clay, sand, etc. Avoid inhalation of vapor, or contact with liquid.

C. **If spilled pesticides reach or threaten to reach a stream or other body of water or water supply.** Notify local health department authorities, the

EPA and/or the Coast Guard immediately. Use dams, ditches or other means to stop flow until decontamination can be carried out.

5. Notify Shell Chemical Company by calling the following telephone number:

(618) 254-7331

You will be put in touch with Shell Chemical staff personnel who will advise regarding further steps to be taken, and arrange for professional help with cleanup and decontamination, if needed.

CLEANUP AND DECONTAMINATION

The instructions that follow are provided for the guidance of response teams and other emergency personnel who are involved with cleaning up D-D spills and decontaminating equipment and premises. For assistance, call the following telephone number to contact Shell Chemical Company staff personnel.

(618) 254-7331

If you do undertake to clean up and decontaminate after a D-D spill, be sure that you know what the hazards are, and that you are properly equipped to do the job safely.

Personal Safety

1. Do not work alone.
2. Wear suitable protective clothing bearing in mind that D-D is hazardous by skin or eye contact, and by inhalation of the vapor. Use a NIOSH/MESA-approved respirator or gas mask when D-D is exposed to the atmosphere. A cap and clean coveralls, or liquid-proof outer clothing should be

worn, along with polyethylene or heavy neoprene gloves and rubber boots. Do not wear street clothes under workclothes. Bathe or shower after work, and change to clean clothing, including fresh underwear. Do not wear clothing contaminated with D-D until it has been thoroughly cleaned or laundered.

NOTE: **Leather shoes should not be worn** as they cannot be decontaminated. **Destroy leather shoes** and other leather articles which become wet with D-D. For further information on personal safety, See Section II B.

Recovery and Salvage

1. Remove undamaged containers that show no evidence of the effects of spillage, and isolate for later cleanup any containers contaminated by the leaker.

2. Transfer remaining D-D from leaking containers to clean containers of the same type by gravity flow or siphon. Use a winch or forklift to raise drums, as necessary.

CAUTION: Do not start siphon by mouth. D-D is flammable; do not cause sparks. If leakage from bulk container such as a tank truck is involved, it is sometimes possible to recover product by transferring it to another tank with a pump.

Cleanup of Spill Area

1. Spread a generous amount of a non-combustible material on the spilled D-D, such as diatomaceous earth, clay or soil. Collect the spent material in a DISPOSAL drum. Repeat as needed to collect all liquid.

2. If the spill is on the ground, dig up enough of the surface to eliminate the contamination placing it in a DISPOSAL drum.

3. Wash equipment and surfaces with a detergent solution, and rinse with water. Collect the washings as described above.

4. For porous surfaces such as wood, this treatment is not effective and the wood should be torn out and replaced. Spills on asphalt surfaces will soften material making it unusable, therefore, removal of localized area will be necessary, practical and desirable. In the case of concrete, dense surfaces can be washed down with a strong detergent solution and rinsed with water. If the concrete is porous, removal will be more a judgmental factor. Surfaces on which food or related products will be stored or processed will mandate removal as will a playground surface. The quantity spilled, location and how quickly cleanup is started are also factors in determining whether the surface should be replaced.

A suitable drum for disposal of contaminated materials can be purchased from most drum suppliers against the following description: Standard 18-gauge, 55-gal. steel drum with bolted ring, full removal head with 2" and 3/4" flange openings and foam rubber gasket undercover. It is suggested that warehouses stock several of these drums and clearly mark them as DISPOSAL for insecticides. (Two of these drums are included in the Decontamination Kit maintained at warehouses where Shell pesticides are stored.)

Cleanup of Intact Containers

1. Wash the outside of contaminated, intact containers with detergent solution. Use a wire brush to remove loosened paint. Collect washings and rinse water in a DISPOSAL drum.
2. If the container finish or the label is damaged, it will be necessary to touch up the paint or relabel the container, or to repackage the product.

Decontamination and Disposal of Empty Containers

1. Rinse empty containers several times with detergent solution, collecting the rinses. Rinse until vapors are no longer present. After the final rinse, puncture the containers on top near the rim to assure complete drainage, if necessary.
2. Puncture or crush decontaminated containers to prevent reuse, and dispose of the remains in accordance with applicable local, state and federal regulations covering pesticide and container disposal. Burial in a solid waste disposal site (landfill) approved for this use is suggested.

WARNING: Do not apply a cutting or welding torch or electrode to empty D-D containers. Residual vapors may be explosive.

Disposal of Wastes

1. If the waste material in the DISPOSAL drum cannot be disposed of locally, for example in an approved landfill. Call the nearest Shell Agricultural Chemical District Office (as listed in the Introduction) for further guidance.

Disposition of Recovered Product

1. Call the nearest Shell Agricultural Chemical District Office for instructions regarding disposition of the recovered D-D.

RESPIRATORY DEVICES FOR PROTECTION AGAINST INHALATION HAZARDS

General

All devices for respiratory protection have limitations on the range of compounds against which they are effective, the length of time they can be relied upon for protection and the conditions under which they can be used and stored. Therefore, all such equipment should be used in strict accordance with its manufacturer's directions.

When a respirator or gas mask is used:

1. The mask must fit snugly on the face, with no leakage.
2. Cartridges or canisters and filters must be replaced within the period specified by the manufacturer, and more frequently if there is any indication of loss of effectiveness.
3. Facepieces should be washed frequently with soap and water (after removing filters and cartridges or canisters), and all parts stored in a clean, dry, dustproof place.
4. Self-contained breathing apparatus, airline supplied respirators, or full-face gas masks should be worn when working in contact with pesticide dusts or vapors in closed or inadequately ventilated spaces.

WARNING: Never use a cartridge or canister-type gas mask without carefully assessing exposure conditions. The atmosphere must contain adequate oxygen (at least 19.5%), and contaminant levels must not exceed the effective capacity of the respirator. Use a self-contained breathing apparatus whenever D-D vapor concentration exceeds 1,000 ppm or there may be inadequate oxygen. FULL FACE MASKS SHOULD NOT BE USED FOR FIRE FIGHTING; USE SELF-CONTAINED BREATHING APPARATUS.

NOTE: For additional information on respiratory protection, see Section III C for OSHA Respirator Standards.

Section : C

D-D® SOIL FUMIGANT EMERGENCY PROCEDURES

The instructions that follow are for immediate and temporary control of emergencies such as fire, leaking containers, vehicle wrecks and other accidents involving D-D.

In case emergency assistance is required, contact Shell Chemical Company by calling one of the following 24-hour telephone numbers:

(713) 473-9461
or (Shell)
(618) 254-7331

(800) 424-9300 (CHEMTREC)

You will be put in contact with Shell Chemical staff who will provide advice or arrange for on-site assistance as needed.

LEAKING CONTAINERS

Despite the best of packaging, there is always a possibility that containers may leak because of accidental damage sustained during handling or shipping. Because D-D is volatile, flammable, moderately toxic to warm-blooded animals, and often transported in bulk, a leaking container can present a special hazard when it occurs in a place where the usual manufacturing plant facilities for cleanup and decontamination do not exist.

Upon Discovery of a Leaking Container, Do the Following:

1. Immediately isolate the affected area and keep out

unauthorized personnel. Avoid exposure. D-D presents a fire hazard. Eliminate ignition sources, including sparks, torches, flares, and open flame. Do not allow smoking in the area.

2. If anyone has been affected by leaking D-D, remove the person from continued exposure. Call a physician or poison control center immediately and give first aid. (See Section : D). Move the patient promptly to a hospital if so directed.

3. If the leaker is indoors, ventilate the area as thoroughly as possible.

4. If possible, stop the leak. See Cleanup and Decontamination in this section for further instructions. However, cleanup of spilled or leaked D-D should be handled by trained and properly equipped pesticide decontamination personnel. By calling one of the emergency numbers given at the beginning of this section, you will be put in touch with Shell Chemical staff who can provide advice or on-site technical expertise if required.

FIRE

D-D is a flammable liquid. DANGER: When exposed to excessive heat from a fire, containers may rupture violently, releasing toxic and noxious vapors which would be injurious by inhalation or by skin contact. Adjacent D-D containers should be kept cool, if possible, by use of water spray.

General Procedures in Case of Fire

1. Call the Fire Department. Indicate the types of pesticides that may be involved. Since the fire officials may require additional information, provide them with the emergency numbers given

at the beginning of this section.

2. Clear all personnel from the vicinity to a safe distance, upwind from smoke and fumes. Isolate the area.

3. All personnel fighting the fire should wear liquid-proof protective clothing (including body covering, hat, rubber gloves, and rubber boots) to prevent accidental contact with D-D. Contaminated clothing will require laundering before reuse. Grossly contaminated articles should be disposed of in a safe manner, as should any contaminated leather items (including shoes).

4. Fire fighters should use a pressure-demand self-contained breathing apparatus for protections against both toxic and oxygen-deficient atmospheres.

   CAUTION: Because of the danger of oxygen deficiency, respirators with canisters or cartridges should not be used when fighting fires. No protection against oxygen deficiency is provided by canisters or cartridges.

5. Confine and isolate the fire and the resulting contamination as much as possible. Trench around the area or otherwise block drainage, including fire-fighting runoff, that could contaminate sewer streams, or other water supplies.

6. Notify Shell Chemical Company. By calling one of the emergency numbers given at the beginning of this section, you will be put in touch with the Shell Chemical staff who can provide advice and on-site technical expertise as needed.

7. Cleanup after a pesticide fire is hazardous and

should be done by trained and properly equipped decontamination personnel. Those engaged in cleanup should be aware of special hazards associated with pesticide fire damage:

A. Standing water may be heavily contaminated with pesticides, and the hazard of pesticide contact may be high. Rubber boots are essential.

B. Pesticides of several different types may be spilled and spread about during a fire. If intoxication results from an overexposure to such mixtures, diagnosis and treatment may be complicated.

C. Structural and other debris remaining after a fire may be contaminated with pesticides. Contact your regional office of the Environmental Protection Agency or your state waste management office for instructions on disposal of this material.

VEHICLE WRECKS

In any accidents involving vans, trucks, or rail cars which are carrying D-D, the following general procedures apply:

1. Alert local police and fire officials and/or emergency crews, as well as the carrier, stating the details and the nature of the cargo. If these officials require additional information, provide them with the emergency phone numbers listed at the beginning of this section. Be cautious and avoid contact with spilled D-D when assessing the extent of the damage.

2. Isolate the affected area and keep out

unauthorized personnel. Allow no smoking or flares in the vicinity of the wreckage.

3 In case of suspected D-D intoxication, immediately call a physician or poison control center and follow the instructions. Since he may require additional information, provide the physician with the Medical Emergencies phone number given at the end of this section. See the First Aid Procedures in Section I D for immediate assistance.

4. Confine any spill resulting from the wreck. In doing so, be careful to avoid contact with the nematicide. Especially, do not, allow spilled product to reach any body of water or sewer system. Quick action is important in containing the spilled material. Wear appropriate personal protective equipment (eye protection, liquid-resistant clothing, approved respirator).

   A. If there is contamination in the vehicle, isolate the vehicle and apply the procedure in the following Cleanup and Decontamination section.

   B. If there is D-D leakage on the ground or pavement, contain the contamination as much as possible by trenching or diking, but avoid exposure to the nematicide. Use earth, sand, or any available absorbent material. See Cleanup and Decontamination, below.

   C. If D-D reaches or threatens to reach a stream or water supply, notify local police or fire authorities IMMEDIATELY. If possible, dam or otherwise stop the normal flow of water until decontamination can be carried out.

NOTE: Bulk shipments of D-D which exceed 500 gallons contain a Hazardous Substance (dichloropropene-dichloropropane mixture) as defined by the Clean Water Act (40 CFR Parts 116 and 117). As regulated by the Department of Transportation, the National Response Center of the U.S. Coast Guard must be notified promptly in the case of a transportation-related D-D spill which is accidentally or intentionally discharged into or upon U.S. navigable waters or adjoining shorelines. The officials should be told that a reportable quantity of a dichloropropene-dichloropropane mixture is involved. This reporting is required by law if a spill from the above tank capacity enters watercourses or sewers entering/leading to surface waters.

You can reach the National Response Center by calling the following toll-free number:

(800) 424-8802

5. Notify Shell Chemical Company of the accident by calling one of the emergency numbers given at the beginning of this section. You will be put in touch with Shell Chemical staff who can provide advice and on-site technical expertise as needed.

CLEANUP AND DECONTAMINATION

Because D-D is volatile, flammable, and moderately toxic, cleanup of spills and leaks and decontamination of equipment and premises should be done by trained and properly equipped decontamination personnel. By calling one of the emergency numbers given at the beginning of this

section, you will be put in touch with Shell Chemical staff who will provide advice and on-site technical expertise as needed.

The instructions that follow are provided for the guidance of decontamination and emergency personnel who may become involved in the cleanup and decontamination of D-D spills.

DO NOT ATTEMPT TO HANDLE THE CLEANUP AND DECONTAMINATION YOURSELF UNLESS YOU KNOW WHAT THE HAZARDS ARE AND YOU ARE EQUIPPED TO DO THE JOB SAFELY.

Personal Safety

1. Do not work alone. Have someone available who can assist you directly or get help if necessary. Remember that D-D is flammable and explosive under certain conditions. See Fire Precautions section, page .

2. Wear proper protective equipment:

   ALL contact with D-D, whether liquid or vapor, must be avoided. Wear clean, liquid-resistant protective clothing, including rubber gloves and boots, as necessary. Wear eye protection and an approved respirator as required to avoid inhalation of D-D. (See Respiratory Protective Devices at the end of this section.) Do not reuse contaminated clothing until it has been laundered or cleaned. Destroy contaminated clothing that cannot decontaminated. Destroy contaminated leather articles, including shoes.

3. Wash hands and face before eating or smoking; do not eat or smoke while working with D-D. Shower after cleanup and change into clean clothing,

including fresh underwear.

Salvage and Recovery of D-D Product

1. Stop any leaks by repositioning the containers or by patching or otherwise repairing the leaks, but take care to avoid contact with the soil fumigant. Pack the damaged containers in a SALVAGE drum.* Fill the drum with compatible cushioning and absorbent material. The drum exterior must include the proper shipping name of the product, the name and address of the consignee, and be clearly marked "SALVAGE DRUM".

2. Isolate for later cleanup any intact containers that have been contaminated by the leaker. Also isolate the intact, uncontaminated containers.

3 Seal and safely store the drum of salvaged, uncontaminated product from Step 1 above. Contact Shell Chemical Company in Houston for advise concerning the disposition of the product. If it is not a an emergency, call one of the following telephone numbers during regular office hours.

(713) 241-0114

or

---

* "The drum utilized may be either a DOT specification or a non-DOT specification drum (greater than 55 gallons) as long as the drum has equal or greater structural integrity than a package that is authorized for the respective materials..." The drum may be used for the shipment of recoverable leakers or for the disposal of contaminated wastes. Two of these drums are included in the Decontamination Kit maintained at warehouse facilities where Shell pesticides are stored. Refer to the rules published in the Hazardous Materials regulations of the Department of Transportation, Title 49, part 173.3.

(713) 241-0115

Cleanup of D-D Spillage

1. Wear protective equipment (including approved respirator) as required to avoid exposure. Cover the spill area with a generous amount of an absorbent material, such as clay, diatomaceous earth, sand, sawdust, or sweeping compound. Sweep the contaminated absorbent onto a shovel and put the sweepings into another SALVAGE drum. Repeat as necessary to collect all liquid spillage. If leakage occurs on the soil, dig up enough of the surface to remove the contamination and place it in the SALVAGE drum.

2. Place shipping cartons and other expendable items which have soaked up or have been contaminated with D-D into the SALVAGE drum. Also put into the SALVAGE drum any empty container which has had its contents transferred or leaked.

Decontamination of Contaminated Areas and Equipment

When D-D spillage has been collected as above, proceed to decontaminate contaminated equipment and surfaces as follows:

Wash down affected areas with a detergent solution, and rinse with water. Absorb wastewater as above or drain it to a sump for future collection and disposal. (CAUTION: Do not allow waste water to enter a sanitary or storm sewer.) Scoop up contaminated absorbent and place it in the SALVAGE drum.

NOTE: For absorptive surfaces such as wood, this treatment is not effective and the wood should be

removed, discarded (e.g., SALVAGE drum), and replaced. Spills on asphalt surfaces will soften material, making it unusable; therefore, removal of the localized area will be necessary, practical, and desirable. In the case of concrete, dense surfaces can be washed and rinsed with water, as above. If the concrete is porous, removal will be more a judgmental factor.

Decontamination of Intact Containers

1. If leaking D-D spills onto other metal, glass, or plastic pesticide containers, use the procedure described in the above section to decontaminate the affected surfaces. If a container has been contaminated with only small splotches or drops, it may be better to let the D-D evaporate or wipe it off with a moist rag. If gross D-D spillage has occurred on paper or fiberboard containers, the extent of damage will determine whether the product is to be discarded or repackaged.
2. If the labels on intact containers are damaged, contact your Shell representative for new labels.

Disposal of Contaminated Materials

Contact your regional office of the Environmental Protection Agency or your state waste management office for advice regarding disposal of the waste material. If local disposal of the wastes is required, follow all applicable regulations or use an authorized hazardous waste disposal site.

[Trial Exhibit 1122]

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D-D® Soil Fumigant Safety Guide

[Shell logo omitted]

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SAFETY GUIDE D-D® SOIL FUMIGANT

D-D® is a broad-spectrum soil fumigant for control of soil dwelling plant pathogenic nematodes. It is a mixture of chlorinated propenes and propanes, principally dichloropropene and dichloropropane. D-D is a liquid with a pungent, garlic-like odor. It is moderately volatile, and is soluble in hydrocarbons and certain other organic solvents, but only very slightly soluble in water. It is generally applied at full strength.

D-D is moderately toxic by ingestion or inhalation and is irritating to the skin. It can be safely used if safe handling procedures and precautions are followed. Use D-D only if you are willing and able to comply with all safety recommendations for this soil fumigant.

SAFETY PRECAUTIONS

While safety is primarily the responsibility of each individual working with D-D, everyone in a supervisory capacity should be especially familiar with the safety recommendations for this fumigant and should always be alert to correct any deviations from safe procedures.

PERSONAL HYGIENE

The following precautions should be observed by all individuals working with D-D in any open system:

General

1. Read (and heed) the warning statements on all product labels.
2. Never work alone.

3. Take recommended precautions and wear proper protective clothing to avoid contact and inhalation of D-D.

Avoid Contact with D-D

1. Wear goggles or face shield, or a full-face gas mask as needed, to protect the eyes. If D-D gets into the eyes, immediately flush them with running water for 10-15 minutes, and SEE A DOCTOR.
2. When handling or working with D-D, wear clean clothing, and gloves polyethylene, neoprene, or polyvinyl alcohol (PVA) gloves are recommended. Never wear clothing or shoes having the odor of D-D. Wash all protective clothing thoroughly after use.

   NOTE: Leather shoes should not be used, as they cannot be adequately decontaminated. Destroy shoes and other. leather articles contaminated with D-D.
3. If clothing becomes heavily contaminated with D-D, or if D-D comes in contact with the skin, stop work immediately, remove contaminated clothing, and thoroughly wash exposed areas with soap and water.
4. After, handling or applying D-D, always wash the hands, arms and face thoroughly with soap and water.

Do Not Swallow Any D-D

1. Always wash hands and face with soap and water before smoking or eating.
2. Never put D-D into the mouth. Do not use the mouth to siphon liquids from containers or blow out clogged lines, nozzles, etc.

Do Not Inhale D-D

1. D-D is moderately volatile and respiratory protection should be worn any time liquid D-D is exposed to the atmosphere or when conducting transferring operations which vent to the atmosphere. These situations include loading and unloading tank cars, tank trucks and marine vessels, in cleaning up accidental spills or in cleaning equipment.
2. Agricultural tractor drivers should wear proper respiratory protection during calibration and filling operations but this is not required when chisels are "down" and the equipment is sealing chisel channels.

ENVIRONMENTAL SANITATION

All users or applicators of D-D, in addition to practicing personal hygiene, are obligated to maintain a safe and clean environment for others.

LEAKING CONTAINERS

Despite the best of packaging, there is always a possibility that a pail or drum of D-D may be damaged in handling or shipping. As D-D is frequently transported in bulk trucks or rail cars, accidents involving these vehicles could result in leakage of large, quantities of D-D.

Upon Discovery of a Leaking Container (Leaker), Do The Following:

1. Isolate the area, and keep people away. Allow no smoking in the vicinity.
2. If the leaker is indoors, ventilate the area thoroughly to minimize fumes.
3. If anyone has been affected by the leaked D-D, call a physician, and render first aid.

4. Invert or reposition the leaking container of D-D *if it can be* done *safely*. Wear respiratory protection to prevent inhalation of D-D vapor, and use gloves.
5. Cover or confine the leakage with an absorbent such as diatomaceous earth, clay, sawdust, sand, or other absorptive material.
6. Contact Shell Chemical Company by calling the following telephone number:

   (618) 254-7331

   You will be put in touch with Shell Chemical staff personnel who will advise regarding further steps to take and arrange for cleanup and decontamination if needed.

FIRE

In any fire involving D-D, the following general rules apply:

1. Notify the fire department immediately. Identify the pesticides that might be involved.
2. Clear out all personnel to a safe distance, upwind from the smoke and fumes.
3. Fire fighters should wear self-contained breathing apparatus for protection against both toxic fumes and oxygen-deficient atmospheres. CAUTION: Respirators and gas mask canisters commonly used for protection against pesticides offer no protection against oxygen deficiency, and should not be used in fire fighting.
4. Use usual techniques and equipment to combat the fire (water spray, foam, etc.)
5. Keep pesticide containers cool, if possible, with a water spray. However, use only as much water as

necessary because excess water compounds the problems of contamination and cleanup.

6. Dike or trench around the area or otherwise keep contaminated water from reaching streams, water supplies, and sanitary or storm sewers.
7. Contact Shell Chemical Company by calling the following telephone number:

   (618) 254-7331

   You will be put in touch with Shell Chemical staff personnel who will provide advice and arrange for cleanup and decontamination as needed.

VEHICLE WRECKS

Vehicle wrecks involving pesticides constitute special hazards because they usually occur where equipment and facilities for cleanup are not readily available. In the case of D-D, which is commonly transported in bulk, a wreck may involve spillage of a large amount of D-D, increasing the risk of hazardous exposure to the fumes or liquid.

In case of a vehicle wreck in which D-D (or any other Shell pesticide) is involved, these procedures are recommended:

1. Notify local police and fire departments and/or emergency crews (as well as the carrier).
2. Isolate the affected area or vehicle and keep people upwind and away. Only personnel with proper respiratory equipment and suitable protective clothing should be allowed into the area. Allow no smoking in the vicinity.
3. Get medical help for anyone affected by the spilled pesticide. Render first aid until the victim is under the care of a physician or hospital.

4. Make every effort to keep pesticide spills or leaks from spreading contamination; but in doing so, take great care to avoid contact with the pesticide.

   NOTE: Quick action may be necessary to limit spread.

Cleanup of Intact Containers

1. Wash the outsides of contaminated intact containers with detergent solution. Use a wire brush to remove loosened paint. Collect washings and rinse water in a DISPOSAL drum.
2. If the container finish or the label is damaged, it will be necessary to touch up the paint or relabel the container, or to repackage the product.

Decontamination and Disposal of Empty Containers

1. Rinse empty containers several times with detergent solution, collecting the rinses. After the final rinse, puncture the containers on top near the rim to assure complete drainage if necessary.
2. Puncture or crush used containers to prevent reuse, and dispose of the remains in accordance with applicable regulations covering pesticide and container disposal. Burial in a solid waste disposal site (landfill) approved for this use is suggested.

   WARNING: Do not apply a cutting or welding torch or electrode to empty D-D containers. Residual material may cause an explosion.

Disposal of Wastes

1. If the waste material in the DISPOSAL drum cannot be disposed of locally, for example, in an approved landfill, call the Operations/Distribution Department; Shell Chemical Company, San Ramon, California, for advice regarding disposal. Refer to

the list of telephone numbers and addresses at the front of the Safety Manual.

Disposition of Recovered Product

1. Call the Operations/Distribution Department, Shell Chemical Company, San Ramon, California, for instructions regarding disposition of the recovered D-D. Refer to the list of telephone numbers and addresses at the front of the Safety Manual.

RESPIRATORY DEVICES FOR PROTECTION AGAINST INHALATION HAZARDS

General

All devices for respiratory protection have limitations on the range of compounds against which they are effective, the length of time they can be relied upon for protection, and the conditions under which they can be used and stored. Therefore, all such equipment should be used in strict accordance with its manufacturer's directions.

(See also "Respiratory Devices for Protection Against Certain Pesticides," U.S. Department of Agriculture, Agricultural Research Service Bulletin ARS-33-76, and its supplements.)

When a respirator or gas mask is used,

1. The mask must fit snugly on the face, with no leakage.
2. Cartridges or canisters and filters must be replaced within the period specified by the manufacturer, and more frequently if there is any indication of loss of effectiveness.
3. Face pieces should be washed frequently with soap and water (after removing filters and cartridges or canisters), and all parts stored in a clean, dry, dustproof place.

4. Self-contained breathing apparatus or full-face gas masks should be worn when working in contact with pesticide dusts or vapors in closed or inadequately ventilated spaces.

   WARNING: Never use a cartridge or canister type gas mask without carefully assessing exposure conditions. The atmosphere must contain adequate oxygen (at least 19.5%). Use a self-contained breathing apparatus whenever exposure exceeds 1,000 ppm or there is a doubt of adequate oxygen. GAS MASKS SHOULD NOT BE USED FOR FIRE FIGHTING: USE SELF-CONTAINED BREATHING APPARATUS.

NOISH/MESA —CERTIFIED RESPIRATORY PROTECTION EQUIPMENT

1. CHEMICAL CARTRIDGE-RESPIRATORS

   (Use for exposure from 1 ppm-1,000 ppm)

   A. Respirators for respiratory protection against organic vapors.

      (1) Welsh, a Textron Co., 7501 (with 7500-1 cartridges), 7503 (with 7500-3 cartridges), 7401L (with 7500-1 cartridges), or 75BP01 (with 7500-1 cartridges).

      (2) Willson Products Div. ESB Inc., 1221 (with R21 cartridges).

      (3) American Optical Corp., R5051 (with R51 cartridges), R6051 (with R51 cartridges), R8151 (with R151 cartridges).

* * *

8. Try to determine the names of all materials (including active ingredients) with which the patient had been working or with which he has been contaminated. Take a label from the container (or a

clean, labeled container) to the hospital or physician, along with any available literature describing the products involved.

INFORMATION FOR PHYSICIANS*

INTOXICATION BY D-D

D-D is a mixture of C_3 chlorinated hydrocarbons which is moderately toxic to mammals following ingestion or inhalation. It is soluble in many organic solvents and fats, but only very slightly soluble in water. The material can be absorbed following ingestion, or inhalation, or through the intact skin. The greatest occupational hazards are skin and eye exposure to the liquid material, and inhalation of and eye exposure to the vapors.

When true intoxication develops, a definite history of exposure to the toxic substance or substances can usually be elicited.

Acute Intoxication: Symptomatology - Diagnosis

Inhalation of high vapor concentrations of D-D may cause irritation of the conjunctiva, laryngospasm and bronchospasm, pain in the chest, cough, and dyspnea. Ingestion causes acute irritation of the gastrointestinal tract with pain, vomiting and diarrhea, dyspnea, cough, and lung congestion and pulmonary edema. Skin contamination may cause irritation and chemical burn. The diagnosis is based on the symptomatology in light of a history of exposure.

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* The treatment of poisoning caused by economic poisons used public health and agriculture is well summarized in the "Clinical Handbook on Economic Poisons." Public Health Service Publication No. 476 which is for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402.

Treatment

If the material has been ingested, carry out cautious gastric lavage. Give no fats or oils, but rather administer a demulcent like alumina gel. Meperidine and atropine are indicated for control of pain and gastrointestinal spasm. In severe cases, continuous suction by naso-gastric tube should be considered. As with the ingestion of all strong local irritants, the possibility of glottic edema should be kept in mind. The administration of corticosteroids or ACTH as an aid in the prevention of esophageal stricture is recommended. Other treatment is also symptomatic and supportive, and the physician should be guided by clinical signs.

In cases of accidental inhalation, removal from contamination usually suffices. In rare cases of severe overexposure with laryngo- and bronchospasm, inhalation of a spray or aerosol of 1% epinephrine or 0.25% isoproterenol may be helpful. In addition, intravenous administration of aminophylline 250 mg should be considered, and positive pressure oxygen administration may be indicated.

In animals, hepatic and renal damage have occurred following D-D intoxication. Therefore, repeated function tests are advisable to detect and evaluate possible liver and kidney injuries following any systemic exposure to D-D.

In case of skin contamination, flush immediately with large amounts of water. Remove clothing immediately and wash skin and hair with mild soap and water. Treat skin irritation as any other serious chemical burn. Except in cases of massive exposure with large areas of skin injury, primary treatment with topical corticosteroid preparations should be considered. As is the case with all other chemical

burns, skin injury due to D-D may take longer to heal than do thermal burns.

In event of eye contamination with D-D, the immediate and thorough lavage of the affected eye is of paramount importance. Topical anesthetics, steroids and antibiotics may be indicated. All but the most minor eye exposures should be referred to an ophthalmologist for evaluation and treatment.

Intoxication Following Continued Exposure to Low Levels of D-D

There is no human experience to indicate that it occurs, but the possibility could be considered that continued exposure to low concentrations of D-D may result in symptoms of central nervous system depression. Termination of exposure should result in prompt and complete recovery.

Animals repeatedly exposed to D-D showed hepatic and renal damage.

MEDICAL INFORMATION

Physicians should direct requests for additional medical information to:

M. B. Slomka, Ph.D., M. D., Medical Director
Shell Chemical Company
2401 Crow Canyon Road
San Ramon, California 94583
Telephone: (415) 837-1531

JA-569

[Trial Exhibit 1123]

[Shell logo omitted]

SHELL CHEMICAL COMPANY
2401 Crow Canyon Road
San Ramon, Ca. 94583

AN OUTLINE OF GENERAL GUIDELINES FOR D-D® SOIL FUMIGANT BULK INSTALLATIONS

D-D® HANDLING AND SAFETY MANUAL

December, 1981

JA-570

AN OUTLINE OF GENERAL GUIDELINES FOR D-D® SOIL FUMIGANT BULK INSTALLATIONS

The following outline has been prepared to give Shell customers an overview of the major features of the D-D® Soil Fumigant Handling and Safety Manual, but it must not be considered a substitute for the manual. All customers must become thoroughly familiar with the entire manual to assure proper handling. Furthermore, while the information contained in this outline and in the Safety Manual itself is believed reliable and is supplied in good faith, Shell Chemical Company does not warrant that the information is suitable for any given customer's particular purposes; each customer should assess his own needs with the aid of a qualified engineer to determine his proper course of conduct. Furthermore, although references are made to a variety of codes, the customer is urged to make direct reference to all applicable local, state, NFPA, UL, OSHA, etc. laws and codes since it is his responsibility for compliance with the law. Shell specifically disclaims any liability for injury or loss attributable to customer's non-compliance with these or any other applicable laws.

I. SAFETY

A. Product Information - Section 1A.

B. Safety Precautions - Section 1B.

1. Be certain all employees are trained in the proper handling techniques for D-D®, and that they observe all label precautions.
2. Arrange for your local Shell Representative to conduct a safety meeting for your employees.

3. Make certain that all employees have the required safety equipment available to them, and that the equipment is maintained in a clean, ready, condition.
4. Safety equipment recommended or required:
   (a) Respiratory Protection
   (b) Eye Protection
   (c) Body Protection
   (d) First Aid Kit
   (e) Eye Wash Facility
   (f) Safety Shower
   (g) Fire Extinguisher

C. Emergency Procedure
1. Be aware of what to do in case of a fire or spill.

II. STORAGE AND HANDLING

A. Tanks – Section IIB.
1. Reference UL 142, STEEL ABOVE-GROUND TANKS and API 650 WELDED STEEL TANKS FOR OIL STORAGE, APPENDIX J.
2. Tank must be in sound condition.
   (a) Normally carbon steel (mild steel, black iron, etc.).
   (b) Usually 0.250" thick.
3. Provide normal pressure/vacuum relief.
   (a) Conservation vent valves recommended.
   (b) Flame arrestor vents legal, but less desirable.
   (c) Vents on tanks located adjacent to buildings or public way must be at least 12' above ground, 5' from

buildings.

4. Provide emergency pressure relief.
   (a) Self-closing manhole cover or adequate multi-purpose gauge hatch are practical substitutes for emergency vent devices.
   (b) Frangible jointed roof is an alternative emergency vent for vertical tanks over 10' in diameter only.

B. Installation of Tank - Section IIB.
   1. Reference NFPA 30, FLAMMABLE AND COMBUSTIBLE LIQUIDS CODE.
   2. Tank should be placed on a firm foundation, Reference API 650, WELDED STEEL TANKS FOR OIL STORAGE APPENDIX B-1.
   3. Bonding and Grounding, Reference NFPA 77 STATIC ELECTRICITY.
      (a) Tank, piping and pumps should be positively grounded.
      (b) Any container being loaded or unloaded should be grounded prior to and throughout the entire filling operation.
   4. Manhole for inspection clean-out and repair should be provided all tanks and compartments over 5,000 gallons.

C. Spill Containment Required - Section IIB.
   1. Reference NFPA 30, FLAMMABLE & COMBUSTIBLE LIQUIDS CODE.
   2. Contain spills by diking or remote impoundment.
      (a) Formed cement is the primary and most desirable dike construction material.

(b) Concrete block dike requires sealing to reduce porosity so consequently is not a preferred choice.

3. Dikes volumetric capacity shall not be less than the greatest amount of liquid released from the largest tank assuming it is full.
4. Dike must be at least 5' from the tank and at least 10' from the property line.
5. Remote impoundment area must be lined and at least 50' from the property line and other tanks.

D. A Gauging Device is Useful to Prevent Overfilling.

1. A non-sparking calibrated stick is the simplest gauge.
2. Gauge tape is practical for large aboveground tanks.
3. Bubble or float gauges can provide remote reading.
4. Sight Tube (a poor but acceptable alternate).
   (a) Tube material must not be attacked by tank contents or the natural environment (sunlight).
   (b) Fire-safe valve at lower end, closed and locked when not in active use.

E. Moisture Controls – Section IIB-2, IIB-3.

1. Recommended but not required. Dried air and resultant dry fumigant reduces the corrosive potential to the bulk tank and enhances the product quality.
   (a) Desiccant type (calcium chloride) dryer on the in-breathing side excludes moisture.
   (b) Nitrogen blanketing excludes moisture

and also reduces possibility of fire or explosion because of oxygen exclusion.

F. Primary Valves, Piping and Accessories.
   1. All primary valves shall be of a fire-safe design. Primary valves are those valves immediately adjacent to the tank. For security purposes, primary valve should generally be locked closed except when in active service.
      (a) Gate valves of steel or nodular iron are most common but certain UL-approved ball valves may be used.
   2. Piping and fittings to be made of seamless or electrical resistance welded steel or stainless steel.
      (a) Use Teflon tape rather than pipe dope to seal threaded fittings.
   3. Hoses, couplings, filter and meter constructed of non-reactive materials. See Section IIB, HANDLING AND SAFETY MANUAL.

G. Pumps – Section IIB.
   1. Centrifugal pump recommended where suction head available.
   2. Electrical installation should conform to NFPA 70, NATIONAL ELECTRIC CODE, for Class 1 Group D, Division 1 and 2, Hazardous Locations.
   3. Gasoline engines can ignite flammable atmospheres and should only be used if they conform with NFPA 385, RECOMMENDED REGULATORY STANDARD FOR TANK VEHICLES FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS.

H. Miscellaneous Information.

1. Commercial carriers usually deliver through a 3" cam-lock female fitting. If your pump has sufficient capacity you can use it to off-load the carrier and in so doing the carrier's hose will be drained. If the carrier's pump is used, the hose between the pump and your tank will remain full and must be drained back into the truck or other suitable container.
2. Cargo tanks or portable tanks (nurse rigs) should have PTO pumps, if possible, for loading and off-loading. If gasoline engine-driven pumps are used, they must conform to the severe restrictions of NFPA 385, RECOMMENDED REGULATORY STANDARDS FOR TANK VEHICLES FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS.
3. Provisions for a vapor recovery system must be installed on tanks. However, commercial carriers are not equipped for hook-up at this time.

JA-576

USEFUL LITERATURE RELATED TO CONSTRUCTION & INSTALLATION OF ABOVE-GROUND STORAGE VESSELS FOR FLAMMABLE LIQUIDS

ITEM	TITLE
*NFPA 30	FLAMMABLE AND COMBUSTIBLE LIQUIDS CODE 1977
NFPA 70	NATIONAL ELECTRIC CODE
NFPA 77	STATIC ELECTRICITY
NFPA 395	STANDARDS FOR THE STORAGE OF FLAMMABLE AND COMBUSTIBLE LIQUIDS ON FARMS AND ISOLATED CONTRUCTION PROJECTS.
NFPA 385	RECOMMENDED REGULATORY STANDARDS FOR TANK VEHICLES FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS

SOURCE:
NATIONAL FIRE PROTECTION
ASSOCIATION PUBLICATIONS
SALES DEPARTMENT
BATTERYMARCH PARK
QUINCY, MASSACHUSETTS 02269
(617) 328-9290 (They will bill)

UL 844 ($5.00)	ELECTRIC LIGHTING FIXTURES FOR USE IN HAZARDOUS LOCATIONS

UL 525 ($4.50)	FLAME ARRESTORS FOR USE ON VENTS OF STORAGE TANKS FOR PETROLEUM OIL & GASOLINE
UL 180 ($4.50)	GAUGES, LIQUID-LEVEL INDICATING AND TANK FILLING SIGNALS FOR PETROLEUM PRODUCTS
UL 142 ($5.00)	ABOVE-GROUND STEEL TANKS FOR FLAMMABLE AND COMBUSTIBLE LIQUIDS.
UL 842 ($4.50)	VALVES FOR FLAMMABLE FLUIDS

SOURCE:

UNDERWRITERS LABORATORIES, INC.
1655 SCOTT BLVD.
SANTA CLARA, CA. 95050
(408) 985-2400

(Send check with order – add 25% to cover cost of postage and handling)

API STANDARD 620	RECOMMENDED RULES AND DESIGN FOR CONSTRUCTION OF LARGE, WELDED, LOW PRESSURE STORAGE TANK
*API STANDARD 650	WELDED STEEL TANKS FOR OIL STORAGE

SOURCE:

AMERICAN PETROLUEM INSTITUTE
PUBLICATIONS AND DISTRIBUTION SECTION
2101 L STREET NORTHWEST
WASHINGTON, D.C. 20037
(They will bill)

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*MOST USEFUL PUBLICATIONS

JA-579

[Trial Exhibit 1127]

D-D® SOIL FUMIGANT INSPECTION SUMMARY BROWN & BRYANT

* * *

Date: 7/16/79 - 7/17/79

D-D SOIL FUMIGANT BULK HANDLING FACILITY SURVEY

Company: Brown & Bryant Location: Arvin, California
Host representatives: Jack Brown
Shell representatives: Bob Swain

(Y) indicates yes. (N) indicates no.
Ref: indicates location in the Handling & Safety Manual.

Ref: (Y) Handling & Safety Manual available.

SAFETY EQUIPMENT FOR PERSONNEL

I-B Respiratory Protection:

(Y) Self-contained one on premises
(N) Full-face respirator
(N) Half-face respirator
(N) Cartridge/cannister replace NH_3 only
(Y) Other NH_3 only, cartridge type – dust respirators available to employees.

I-B Eye Protection:

(Y) Chemical worker's goggles Occasionally worn

(N) Other _____

I-B Body Protection: (description of)

(N) Slicker suits _____

(N) Aprons _____

(N) Resistant coveralls _____

(Y) Foot covering _____

(Y) Gloves _____

(N) Heavy _____

(Y) Light-weight _____

Additional notes on safety dress:

SAFETY EQUIPMENT IN OPERATION AREA

II-B Eye Wash:

(Y) Fixed station - 150'-200' near warehouse

(N) Portable type: _____

II-B Safety showers:

(Y) Fixed station (same as above)

(N) "Portable" wash--Describe: _____

_____

II-B Fire extinguishing: City water piped into plant

(Y) Water - hose/hydrant size:

1-1/2 Hose - 2" line 75' away

1-1/2 Hose - 2" line 25' away

(N) Water - hose/tank size: ___ capacity ___

(Y) Extinguishers Size: 1-25# ABC

type: Dry Chemical 150' away

Number within 50' of operations:

5# ABC in each vehicle

II-B (N) Locations of above well marked.

(Y) Free access to above?

Additional notes on safety equipment:

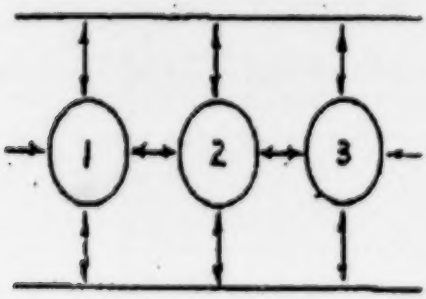
II-B TANKAGE

Tank #	Dia(ft)	length(ft)	Gallons	Horiz. or Vert.
#1	14'	18 - 20'	20,000	X

II-B Construction

Tank #	Material & Thickness	Press. Rating	Code	Stamp
#1	Steel ?	Atmos.	N	N

II-B Location (per NFPA 30)



with respect to
-Property lines
-Roads & easements
-Adjacent tanks
-Buildings
300-400' set back from nearest resident

Foundation

II-B Type Gravel

Fig. II-B & II B4 (N) Tank anchoring provisions _____

Access

(N) Stairs _____

(N) Ladder _____

(N) Platforms _____

(N) Guard rails _____

Fig. II -B1 & II-B4 Spill Containment Provisions

(N) Diking-Height: _____

Dimensions: _____

Tanks with common dike: _____

_____

* (N) Controlled run-off to: _____

_____

(N) Sewers, ditches and streams protected?

* Property is graded to a sump where any drainage will either evaporate or percolate into the soil. If run-off is heavy, drainage will follow natural drainage off the property. WQCD have requested that an impoundment basin with impervious lining be installed to collect all drainage. B&B are planning to proceed with this request. The water table is 385'.

[Trial Exhibit 1199]

INVOICE ORIGINAL

[Shell logo omitted]

* * *

CONDITIONS OF SALE

* * *

3. DELIVERIES Unless otherwise provided, deliveries of each Product shall be made (a) only at Buyer's plant at each Delivery Destination specified for such Product; (b) only if Seller has received Buyer's order reasonably in advance of the day which Buyer desires each delivery to be made; and (c) except at Seller's option only in minimum delivery quantity not less than the minimum specified. Seller may deliver any Product in any delivery equipment by any means of transportation and from any shipping point that Seller may select; and to any delivery by railroad, delivery at Buyer's plant at Destination means railroad's siding designated by Buyer or, absent such designation, at railroad's delivery point nearest such Destination. The quantity or weight of each delivery by rail car or bulk truck shall be determined on the basis of outage tables with appropriate corrections for temperature or weighmaster's certificate (as the case may be). Buyer shall furnish and maintain facilities for receiving and storing all Products delivered which are safe, adequate, and in compliance with all applicable governmental regulations, and shall unload each delivery promptly and at buyer's own risk and expense (including any demurrage due to delay in unloading).

* * *

[Trial Exhibit 1414]

PAYMENTS FOR THE ACCOUNT OF SHELL CHEMICAL COMPANY

REFERENCE NO.	INVOICE NO.	INVOICE DATE	DISCOUNT	AMOUNT
05-06-001-01 OR REQUEST PAYMENT FOR DD FACILITIES IMPROVEMENT PROGRAM BASED ON FIRST QUARTER 1983 PURCHASES [Handwritten note omitted]				2,405.20
NG [illegible] CODE	8 78550 01 VENDOR NO.	620729 CHECK NO.	5362 BANK I.D.	2,405.20 AMOUNT OF CHECK

[logo omitted]
DATE
05-09-83
PAY****2,405 DOLLARS 20 CENTS ****2,405.20
TO THE ORDER OF CHECK NO. 620729
BROWN AND BRYANT INC
P.O. BIN T
SHAFTER, CA 93263

BANK OF OKLAHOMA /s/D.E. Cannon
TULSA, OKLAHOMA TREASURER

6:207 29 :103900036: 206149442

[Handwritten:] Will pay for valves & hose needed for July 1 ruling that BB has to empty DD trucks – (not the driver) Trucks will be fitted with 3" valves. BB has to have pump.

JA-585

[Trial Exhibits 1464A and G-9]

REMEDIAL INVESTIGATION / FEASIBILITY STUDY REPORT

(First Operable Unit - Source Control)

BROWN & BRYANT SUPERFUND SITE

Arvin, California

Prepared by
U.S. Environmental Protection Agency
Region IX

May 28, 1993

[EPA logo omitted]

ORGANIZATION OF REPORT

This document is the combined Remedial Investigation (RI) report and the Feasibility Study (FS) report for the first operable unit at the Brown & Bryant site in Arvin, California. The RI/FS reports address the surface soils, the vadose zone soils to the first groundwater and the first groundwater. The reports were written to be stand alone, therefore neither the table of contents nor the executive summary for either report has been combined. The order of this document is the RI table of contents, the RI executive summary, the RI report, the FS table of contents, the FS executive summary, the FS, a combined reference section and finally, the FS appendix. The RI appendices are in a separate document.

BROWN & BRYANT
REMEDIAL INVESTIGATION REPORT
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* * *

* * *

[Trial Exhibit G-9]

* * *

EXECUTIVE SUMMARY

This report presents the findings of a Remedial Investigation (RI) conducted for the Brown & Bryant (B&B) Superfund Site in Arvin, California. The investigation focused on the surface soil, subsurface soil to the first water bearing unit (the A-zone soils), and the first water bearing unit located approximately 65 to 70 feet below ground surface (A-zone groundwater). The soil below the A-zone groundwater (the B-zone soils) and the second water bearing unit (B-zone groundwater) were also investigated to a limited extent during this RI; however, these areas will be fully addressed as part of a second operable unit RI.

B&B was a pesticide reformulator and custom applicator facility from 1960 to 1989. The facility is approximately 5 acres located at 600 South Derby Road in Arvin, California. Arvin is an agriculture community with a population of approximately 9,300 people. The site is located in light industrial and commercial area, with a residential area located across the street.

Contamination of soil and groundwater resulted primarily from poor housekeeping, spills, and leaks from a surface pond and sumps. In 1981, the facility was licensed under RCRA as a hazardous waste transporter.

Investigations at the site began in 1983 when the State required B&B to conduct site investigations and dispose of contaminated soil. In 1989, the site was listed on the National Priorities List of superfund sites. In 1990, EPA conducted an emergency response site assessment and began the RI.

The field investigation for the RI consisted of the following main activities: surface and subsurface soil sampling events; the installation of seventeen monitoring wells, thirteen of these were installed by the Potentially Responsible Parties as part of an Unilateral Administrative Order; and five rounds of groundwater sampling. A total of twenty A-zone groundwater wells, seven B-zone groundwater wells and two City wells were sampled during the RI. Fifty-seven soil borings were drilled by EPA and thirty-nine surface soil samples were collected. Soil and groundwater samples were analyzed for a wide array of pesticides and herbicides, volatile and semivolatile organic chemicals, and metals. Tests were also performed to characterize the physical properties of the soil and to characterize general groundwater quality.

The geology at the site is an alluvial deposit of alternating layers and mixtures of unconsolidated sands, silts and clay. The stratigraphy is very heterogeneous and layers tend to be discontinuous. The site geology has been divided into two zones. The A-zone includes unsaturated soil to 65 to 75 feet below ground surface (bgs) and includes the first water bearing unit, the A-zone groundwater. The base of the A-zone is a thin sandy clay layer from 75 to 85 feet bgs. The clay layer and the A-zone groundwater occur under the entire site but disappear within 900 feet

south of the site. The B-zone includes unsaturated soil below the A-zone and the second water bearing unit or the B-zone groundwater at 150 to 155 feet bgs. The B-zone extends to at least 250 feet bgs and ends at a clay layer known as the Corcoran Clay which confines the drinking water aquifer below it. The thickness of this clay later at the site is unknown.

Groundwater in the A-zone flows in a generally southern direction, with some mounding of the water table observed from the southwest corner of the site extending south. Water levels measured during the RI have shown a steady decline in the water table, probably as a result of the long drought in California. The saturated thickness of the A-zone groundwater is from 0 to 10 feet. The hydraulic conductivity in this zone was measure at low levels of 10^{-4} to 10^{-6} cm/s, and from a slug test the groundwater velocity was estimated at 53 feet/year. Extraction of contaminated A-zone groundwater for site remediation is expected to be difficult due to its low permeability and thinness. Slug test results suggest that a yield of less than 100 gallons per day can be expected for wells in this groundwater.

The B-zone groundwater is actually composed of a series of water bearing units. All of the new wells in the B-zone were installed in the B-2 water bearing unit, located at approximately 170 feet bgs. The direction of flow in this unit is to the south, and the gradient is very flat (0.0004). Permeabilities are much higher than for the A-zone groundwater. The pump test indicted that wells could be pumped at 7 gpm for an extended period.

Sampling results for surface soils and construction zone (to 7 feet bgs) identified dinoseb as the only

contaminant of concern. Dinoseb was detected at over 7,000,000 ug/kg. The principal hot spot of dinoseb contamination occurs in the location of a former spill, along the east fence-line. High concentrations of dinoseb in surface soils were also found scattered in three other locations on-site and low concentrations were found over much of the site. Within the construction zone for the site, the spill area was the only location where high concentrations of dinoseb were found.

Soil contamination down to the A-zone groundwater was found over much of the site, but was primarily concentrated in three areas: the sump and wash pad area, the dinoseb spill area, and the pond and the large storage tank in the southwest corner of the site. Within these three areas and over the entire site, six chemicals were identified as occurring at highest concentrations and to the greatest extent within the A-zone soils. These chemicals are 1,2-dicloropropane, 1,3-dicloropropane, dibromochloropropane, 1,2,3-trichloropropane, ethylene dibromide, and dinoseb. All of these chemicals except for dinoseb are volatile organic chemicals.

Dinoseb was found concentrated in the top 30 feet of the spill area and then declined significantly in concentration down to the A-zone groundwater. In the pond and sump areas, the concentrations were significantly less than in the spill area.

Volatile organic contaminants were found in highest concentrations in the sump and wash pad area. One boring in particular, boring I (located in the center of the sump), strands out for its exceptionally high concentrations. These contaminants were also found at significant levels in the area of the pond, and then were

found in only relatively small concentrations elsewhere at the site. In the sump and was pad area, concentrations were highest from 20 and 30 ft bgs, but were also found at concentrations greater than 1,000 ug/kg over most of the A-zone within this area. 1,2-DCP was the volatile contaminant found at highest concentrations, followed by DBCP, TCP, EDB, and 1,3-DCP. In the area of the pond, concentrations were highest from 30 to 40 ft bgs, but in general were found fairly evenly distributed over the A-zone. From highest to lowest, the contaminants in the pond area were the same as in the sump and wash pad area.

Within the A-zone groundwater the same six chemicals plus chloroform were found in highest concentrations and were most widely distributed. The reservoir of contamination in the A-zone groundwater appears to be significantly larger than any other contaminated media at the site. Concentrations for each of the seven contaminants, except for 1,3-DCP, were found at levels as high as 1,000 to 100,000 ug/1. The highest concentrations were consistently observed in well AMW-2P, located near the sump, and at well WA-5, which is directly west of the sump, and at wells AMW-1P, EPAS-2 and EPAS-3, which are all located near the pond. The distribution of contaminants was consistent with the locations of the major sources areas and follow a pattern consistent with the groundwater flow in the A-zone. In general, contamination was observed at slightly higher levels at wells near the pond when compared with wells near the sump; 1,2-DCP was a notable exception.

* * *

* * *

[Exhibit 1464A]

SECTION 4: NATURE AND EXTENT OF CONTAMINATION

This section presents the results of field investigations conducted during the RI/FS that provided data on the nature and extent of contamination in the media of concern at the site. Presented below are the findings for surface soils, subsurface soils, and groundwater units sampled during the RI/FS. For each media specific section below, only the results of sampling conducted by EPA or its contractor are presented. The data collected by the PRPs' contractor, Kennedy/Jenks (K/J), is outside of the scope of this RI/FS and is not presented here.

For each media discussed below, all chemicals that were detected during the RI/FS are listed along with the highest detected result in each media. These lists of chemicals are then screened to identify the most important contaminants for determining the extent of contamination. In all cases, the extent of contamination is only discussed for those chemicals that were detected at greater than 5% frequency; in some cases, this list is further screened using existing health-based action levels or for other reasons discussed below that suggest that the chemical is not a significant contamination threat. The intent is to focus only on those chemicals that will be determining factors in selecting and specifying the site remediation, which is discussed in the Feasibility Study.

4.1 Source Areas

Historical sources of contamination at the site have all been removed with the closure of the site in the late

1980s. Based on the facility operations history (see section 1.2.2) the primary historical source areas are the tank area in the center of the site, the wash pad and sump area just south of the tanks, the dinoseb storage area where a spill occurred (along the east fence line), the waste pond, and the area between the pond and the large storage tank (see Figure 1.3). Of these areas, all have shown significant levels of contamination in the surface and/or subsurface soils except for the tank area in the center of the site.

These historical source areas have in the past served as points for potential direct exposure to contamination and sources of groundwater contamination. Despite clean-up actions taken to date (see section 1), contamination remains within the vadose zone and continues to pose a potential threat to groundwater quality, and contamination remains in the surface soil and poses potential risks from direct exposure. In addition to these soil source areas, the A-zone groundwater is highly contaminated and appears to be the most significant and largest reservoir of remaining contamination in any portion of the site. The A-zone groundwater contamination as well as the soils contamination are described and discussed in detail in the sections below.

[Trial Exhibit G-9]

Aside from the above more significant source areas for site contamination, contamination is also found distributed over much of the site at lower concentrations.

4.2 Surface Soil Contamination

To examine the nature and extent of contamination in surface soils, data was compiled from fifty surface

soil samples and 191 sample analyses (see section 2 and Figure 2.3). (For the purpose of identifying chemicals of potential concern in surface soils, only the results of the surface soil samples collected with a trowel from the top one foot were used. To determine the extent of contamination for the chemicals of potential concern, soil boring data from the surface were also used. A total of seven organic compounds were detected in surface soils during the RI/FS, including three volatile organic compounds, three semivolatile organic compounds, and dinoseb (all hits in surface soil samples are included in Appendix F). The chemicals are listed in Table 4.1; for each chemical the total number of hits, the frequency of detection, and the highest result detected are also presented. Of the seven organic chemicals detected, four chemicals were detected at a greater than 5% frequency, and of these four chemicals, only dinoseb is a chemical of concern for risk assessment (see section 6.1). The extent of dinoseb contamination is discussed below in section 4.2.1.

Based on historical data for the chemical used at B&B, metals have not been considered a likely contamination threat, and this was found to be true with respect to surface soils. During the RI/FS, a total of nineteen samples were analyzed for a routine list of hazardous and nonhazardous metals. Table 4.2 summarizes the results of these analyses. The table includes a list of all metals detected in subsurface soils, and, for each metal detected, the highest and average concentrations and the frequency of detection are also presented. Average concentrations are provided for both on-site samples and background samples (two background samples were collected from location SS06). No significant difference were observed

between the background and on-site averages; the difference between the two averages is always less than an order of magnitude and in many cases the differences are significantly smaller. In fact, the background average is frequently higher than the on-site average. Based on this data, no further evaluation of the metals results in surface soils is provided.

4.2.1 Extent of Dinoseb Contamination in Surface Soils

Dinoseb is found throughout the site and is more widely distributed in soil than any other site contaminant. Dinoseb was detected in thirty surface soils samples and eighteen soil boring samples taken from the surface. Table 4.3 lists all the results for surface soil and soil boring samples for dinoseb within the top foot of soil, and Figure 4.1 includes all these locations. A total of twenty-one samples from the top one foot were non-detect for dinoseb, and the detection frequency for dinoseb in surface soil samples was 70%.

A health-based clean-up level for dinoseb in surface soils has been established at 80 mg/kg (see the FS Report). Eight surface soil sample locations had detected dinoseb concentrations greater than 80 mg/kg. The eight sample locations are surface soil samples 23, 105, 106, 110, 411, and soil boring locations C, U and X (see Figure 4.1). From these samples, four areas for potential clean-up are identified: the dinoseb spill area along the east fence line (which had the highest dinoseb concentration on-site of 7,400 mg/kg), the northeast corner of the site, a second location along the east fence line (at location 105), and an area to the east of the large storage tank (at location 110). To further identify areas for potential clean-up, Figure 4.1 also identifies the locations of eight other samples with

concentrations of dinoseb between 8 mg/kg and 80 mg/kg. These samples are in the same general locations as the samples with results above 80 mg/kg.

Based on the data collected, it is difficult to determine the exact extent of each area exceeding the clean-up level. Table 4.3 segregates the dinoseb results for each of the four areas identified above and includes the average and standard deviation for the results from three of these areas and for the site overall. In general it appears that there are isolated hot spots with concentrations in excess of 80 mg/kg. In three of the four areas with concentrations in excess of 80 mg/kg, only one sample in each area had concentrations above this level. In the dinoseb spill area, five locations were above 80 mg/kg.

The extent of dinoseb contamination from 1 to 7 feet bgs was also investigated. Seven feet is the extent of a possible construction zone and is based on sewer line data from the city of Arvin. The risk from construction worker exposure to contamination in this zone was evaluated in section 6. Dinoseb was the only contaminant of concern in this depth interval, and only two samples from one soil boring location were detected at concentrations of dinoseb greater than 80 mg/kg. These samples were from soil boring C at 2 feet bgs (4,300 mg/kg) and 5 feet bgs (5,800 mg/kg). Soil boring C is located in the dinoseb spill area.

* * *

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA

THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, et al.,	)	No. CV-F-92-5068 OWW/DLB
	)	CONSOLIDATED
Plaintiffs,	)	ARVIN CASES
	)	RAILROADS' PROPOSED FINDINGS OF FACT
vs.	)	
BROWN & BRYANT., INC., et al.,	)	TRIAL DATE: March 30 - May 14, 1999
Defendants.	)	

* * *

E. Divisibility

Introductory Comment. It is well settled that where there are distinct harms or a single harm capable of being reasonably apportioned among multiple causes, liability is several and not joint. See, e.g., Restatement (2d) of Torts, § 433A; In re Bell Petroleum Services, Inc., 3 F.3d 889, 895 (5th Cir. 1993).

In this case, any harm caused by releases on the RR Property are a separate harm from the soil contamination on the B&B Property and the groundwater contamination because: (1) the reported releases have not traveled to the groundwater; (2) even

if they did communicate to the groundwater, such communication was insufficient to have caused the incurrence of response costs; and (3) in the event some harm to the groundwater is proven, such harm is reasonably capable of apportionment on the basis of relative mass. See, e.g., United States v. Dico, Inc., 136 F.3d 572 (8th Cir. 1998); United States v. Alcan Aluminum Corp., 990 F.2d 711, 722 (2d Cir. 1993).

98. The Railroads' liability for releases from the Railroad Property is divisible if the contribution to the environmental harm and the associated response costs is separate from, or reasonably apportionable from, the contribution from the B&B Property.

99. The Railroads' expert Dr. Thomas Kalinowski, an environmental scientist experienced in the field of site characterization and remediation, testified to an appropriate algorithm for apportioning the parties' respective response costs between the two parcels. The Government disputes the Railroads' divisibility theory as a matter of law -- primarily on the grounds, rejected by this Court in its earlier rulings on summary judgment, that the entire site should be treated as a single facility -- but did not rebut or criticize Dr. Kalinowski's methodologies. [See Chirlin, 1751:10-1752:23]

100. With respect to future groundwater remediation, the cost of extracting and treating the groundwater using the granulated activated carbon (GAC) system envisioned by the EPA may be divided between the RR Property and the B&B Property according to the ratio of the mass of contamination in the A-zone groundwater attributable to releases from each of the parcels to the total mass of contamination in the groundwater. The total mass of contamination dissolved in the groundwater and/or adsorbed to the

vadose zone soil is approximately 557 kg. [Kalinowski, 3452:19-3453:7; 3481:8-3494:23; Ex. 3032]

Comment. (1) The total mass of contaminants in the groundwater is actually higher, because Dr. Kalinowski did not calculate the amount of DNAPL present. Kalinowski, 3490:23- 3491:11. According to Dr. Kueper, at least 1800 gallons of DNAPL are in the A-zone. [Kueper, 3837:3-3839:14; 3854:5-12, 3862:15-22]

(2) The Government did not put in any estimate of the amount of groundwater contamination, if any, caused by releases from the RR Property. Dr. Kalinowski and Dr. Stephens both testified that in their opinion, the amount of such contribution is zero. [Kalinowski, 3496:9-22; Stephens, 3691:12-19, 3671:3-7] The Railroads urge the Court similarly to find that their percentage share of future groundwater remedial costs is zero. However, in the event that the Court concludes there is sufficient evidence to hold the Railroads liable for some portion of such costs, the Railroads' apportionable share should be determined by Dr. Kalinowski's formula.

101. The Government's past response costs are similarly divisible between those costs reasonably related to the investigation of actual or potential releases on the RR Property, and those costs related to the B&B Property:

(i) Costs incurred in connection with the TAT drilling and sampling effort through December, 1990 are reasonably apportionable on the basis of the ratio of the number of borings (7) drilled on the RR Property to the total number of borings (41) drilled on the site. This calculation results in the allocation of $489,000 of response costs to the Railroads. (See Ex. 3032.)

(ii) The response effort in 1991 through August, 1992 consisted primarily of Kennedy/Jenks' work, on

behalf of the Railroads, in response to the EPA's Administrative Order 91-6, and of the soil treatment efforts of EPA's contractor Roy F. Weston on the B&B Property. Those costs are discussed in section III-D-1, below.

(iii) During the period September, 1992 through May 1993, EPA incurred approximately $1.13 million in costs in connection with its preparation of the RI/FS. By that time, EPA had available to it extensive data indicating that the reported soil contamination on the RR Property did not require remediation, and that there were no measurable sources of groundwater contamination on the RR Property. Those costs are, therefore, apportionable solely to the B&B Property. [Ex. 3016-B; Kalinowski, 3519:17-3527:12]

* * *

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF CALIFORNIA
HON. OLIVER W. WANGER

UNITED STATES OF AMERICA and DEPARTMENT OF TOXIC SUBSTANCES CONTROL OF THE STATE OF CALIFORNIA, Plaintiffs,	)	No. CIV-F-92-5068 OWW
	)	MOTION TO AMEND FINDINGS OF FACT
vs.	)	
THE ATCHISON, TOPEKA & SANTA FE RAILWAY COMPANY, et al., Defendants.	)	

FRESNO, CALIFORNIA — MONDAY, JANUARY 27, 2003

REPORTER'S TRANSCRIPT OF PROCEEDINGS

* * *

[16]

Thank you, your Honor.

THE COURT: All right. Well, you can comment on my view because you know what it is, but we might as well discuss it eyeball to eyeball.

It seems to me that we know that there was storage, that they washed the warehouse, that they washed rigs. They rinsed out containers when D-D was being delivered in containers. We don't have the

specific evidence that it was being stacked there, but we do have anecdotal evidence from people that there were tipped cans and they had the tops off or they had the hoses in them that were used to basically transfer the product, and all that was on the railroad property.

And we have this huge battle about the culvert, and I mean there is no dispute there was an 8-inch pipe through the, if you will, the berm under the railroad track to get any drainage that was building up on the railroad side to the pond and sump in the southeast corner of the property.

And so what it seems to me is that, by contrast, you have loading, formulating, tremendous activities, I'm not going to detail every one of them, that a lot of products that Shell didn't deliver, didn't have anything to do with that are going on at not only the warehouse, but all of the—all of the different facilities, the storage tanks, the loading docks, the wash pads, all that that was at the Brown & Bryant [17] parcel, which was 80 percent of the surface area of the site.

But the difference in activities, I think 80 percent would be an understatement of what's going on day in and day out in terms of the spilling, the washing, the introduction of water. And the evidence the Court believes showed that there was simply less washing, less surface water that was nonprecipitation introduced to the railroad parcel than there was to the Brown & Bryant site.

Now, I agree with you, to me, the equity of that screams out and you can't ignore it, you can't stick someone for the whole site under those conditions. Their scorched earth approach, I mean I agree with you, it's a horrible thing to do to a judge. And I mean it's probably the worst thing any litigant has ever done

to me, and I had to work harder because of it, but I didn't penalize them for it. I did what I thought was right in accordance with the law and equity because we still have an allocation and equitable proceeding.

I mean they can, in good faith, believe what their experts said. I assume—but I think that their experts never dealt with the evidence of what was going on on the parcel. They just dealt with what they got in the random borings and the subsurface data, such as it was, that was available.

And so that's what I did. And that's why I did it.

* * *

PETITIONER'S BRIEF

Supreme Court, U.S.
FILED
NOV 17 2008
OFFICE OF THE CLERK

Nos. 07-1601, 07-1607 (Consolidated)

In the Supreme Court of the United States

THE BURLINGTON NORTHERN AND SANTA FE RAILWAY COMPANY AND UNION PACIFIC RAILROAD COMPANY,

PETITIONERS,

v.

UNITED STATES OF AMERICA, ET AL.,

RESPONDENTS.

SHELL OIL COMPANY,

PETITIONER,

v.

UNITED STATES OF AMERICA, ET AL.,

RESPONDENTS.

ON WRITS OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

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QUESTION PRESENTED

Whether the Ninth Circuit erred by reversing the district court's reasonable apportionment of responsibility under CERCLA, and by adopting a standard of review and proof requirements that depart from common-law principles and conflict with decisions of other circuits.

LIST OF PARTIES AND RULE 29.6 STATEMENT

BNSF Railway Company ("BNSF"), whose name changed from The Burlington Northern and Santa Fe Railway Company, is the successor in interest to the Atchison Topeka and Santa Fe Railway Company. BNSF has publicly traded debt securities listed on the New York Stock Exchange. BNSF is also a wholly-owned subsidiary of Burlington Northern Santa Fe Corporation, which is a publicly held corporation whose common stock is listed on the New York Stock Exchange, Chicago Stock Exchange, and Pacific Exchange. Approximately 18.5% of the stock of Burlington Northern Santa Fe Corporation is owned by Berkshire Hathaway Inc.

Union Pacific Railroad Company ("UPRR") was formerly known as Southern Pacific Transportation Company. Union Pacific Corporation owns 62.6% of UPRR's stock, and also wholly owns Southern Pacific Rail Corporation. Union Pacific Corporation has issued publicly traded securities, and UPRR has issued publicly traded debt securities.

Also petitioning from the decision below, by separate petition for certiorari, is:

Shell Oil Company ("Shell"), a wholly owned subsidiary of Shell Petroleum, Inc.

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OPINION BELOW

The amended opinion of the U.S. Court of Appeals for the Ninth Circuit and the dissent from the denial of rehearing en banc (Pet.App.-1a-81a) are reported at 502 F.3d 781.

JURISDICTION

The Ninth Circuit entered judgment and denied petitions for rehearing en banc on March 25, 2008. Petitioners timely filed petitions on June 23, 2008. This Court granted certiorari on October 1, 2008 and has jurisdiction pursuant to 28 U.S.C. §1254(1).

STATUTORY PROVISIONS INVOLVED

The addendum at the back of this brief (Add.-3a-7a) reproduces the relevant text of the Comprehensive, Environmental, Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. §§9601 et seq.

STATEMENT OF THE CASE

CERCLA authorizes the government to seek reimbursement from "covered persons" for the cost of remediating hazardous waste sites. *See* 42 U.S.C. §9607(a). Congress declined to enact provisions that would have made all covered persons jointly and severally liable, and chose instead to rely on common-law principles to govern apportionment of liability. As numerous courts have recognized, the common law favors apportionment so long as a "reasonable basis" can be found for a "rough estimate" of each party's causal contribution. *See* Restatement (Second) of Torts §433A & cmt. b (1965) ("Second Restatement").

The potentially responsible parties ("PRPs") in this case include the owner and operator of an agricultural

chemical distribution facility (Brown & Bryant, or "B&B"); the maker of some of the chemicals distributed there ("Shell'); and petitioners Union Pacific Railroad Company and The Burlington Northern and Santa Fe Railway Company (the "Railroads")—who were the passive owners of a small adjacent parcel of land ("the Railroad parcel") that B&B leased, for less than half of the relevant time period, primarily for use as a parking lot. The lion's share of the response costs is attributable to investigation and remediation of soil and groundwater contamination on and underneath B&B's property ("the B&B parcel"), which represented 80% of the site. After a 27-day trial, the district court made detailed findings supporting its determination that the Railroads' liability could be apportioned at 9% by reference to the relative sizes of the land parcels, the length of time each was used, and the particular chemicals spilled on each.

That figure was reasonable and resolved all uncertainty by overstating the Railroads' relative responsibility. In what the Ninth Circuit later described as an "exceedingly detailed" 185-page opinion, Pet.App.-15a, the district court compared both the frequency of and relative risk posed by the spills on each parcel and determined:

(1) that the Railroad parcel was used far less intensively, such that the activities giving rise to spills on the B&B parcel were "at least ten times greater" than the "relatively limited extent of hazardous release-producing activities on the Railroad parcel," Pet.App.-251a;

(2) that the groundwater contamination that drove the need for remediation was located almost

exclusively (99%+) under a sump and pond on the B&B parcel, Pet.App-104a-05a;

(3) that spills of these volatile chemicals were extremely unlikely to reach groundwater unless they were mixed with a substantial volume of water at the surface, Pet.App.-98a; and

(4) that spills mingled with water occurred overwhelmingly on the B&B parcel, where B&B dumped thousands of gallons of rinsate a month directly into the wet sump and pond, Pet.App.-247-48a; JA-367.

Indeed, the district court expressed doubt that the spills on the Railroad parcel contributed to the groundwater contamination *at all*, and ultimately concluded that the Railroads were not responsible for any expenses relating to one of the three chemicals at the site. Pet.App.-102a-03a, 248a, 251a.

The Ninth Circuit "d[id] not fault the district court's factfinding," Pet.App.-38a, but nevertheless reversed and held the Railroads jointly and severally liable for the entire cleanup, Pet.App.-43a-44a. The panel held that apportionment requires "records" showing with "precision" exactly what chemicals were spilled, where, and when—and that any uncertainty must be resolved in favor of joint and several liability to maximize the odds that some solvent PRP, even if minimally responsible, can be saddled with the entire loss. In this context, that rule means that the owners of an ancillary parcel leased on average for less than $1,000 per year will be held jointly and severally liable for tens of millions to clean up contamination they did not cause on property they never owned.

The Ninth Circuit's approach disregards the common-law principles that Congress intended to govern apportionment under CERCLA, in the service of the court's own flawed conception of public policy. Eight judges dissented from the denial of rehearing en banc, explaining that the panel "applie[d] CERCLA in a novel and unprecedented way to impose impossible-to-satisfy burdens on CERCLA defendants," Pet.App.-57a (footnote omitted), and that "[t]he whole point of Restatement §433A is that no *specific* evidence is required for apportionment so long as the evidence and method used are 'reasonable,'" Pet.App.-69a-70a. This case presents a clear example of liability that would be apportioned at common law and, as the district court observed, a ruling to the contrary "takes strict liability beyond any rational limit." Pet.App.-245a.

The Ninth Circuit's decision should be reversed.

I. STATUTORY BACKGROUND

1. CERCLA, enacted in 1980, was a radical statute tempered by traditional principles. CERCLA imposed expansive, retroactive liability for cleanup of environmental contamination that occurred decades or more ago, on classes of contemporary PRPs that frequently bear no fault for that contamination in any ordinary sense. Even "'innocent' private parties .... not responsible for contamination," such as an uninvolved landlord, "may fall within the broad definitions of PRPs." *United States v. Atl. Research Corp.*, 127 S. Ct. 2331, 2336 (2007).

Congress did not, however, abandon traditional principles allowing for apportionment based on causal responsibility. Congress declined to adopt the express,

mandatory impositions of joint and several liability that existed in versions of CERCLA that passed the House and were reported out of committee in the Senate. H.R. 85, 96th Cong. (1980) and S. 1480, 96th Cong. (1979). Fearing that such a regime would "impose financial responsibility for massive costs and damages awards on persons who contributed minimally (if at all) to a release or injury," 126 Cong. Rec. 30972 (1980), sponsors eliminated any mention of joint and several liability "to avoid a mandatory legislative standard applicable in all situations which might produce inequitable results in some cases," *United States v. Chem-Dyne Corp.*, 572 F. Supp. 802, 808 (S.D. Ohio 1983). Senator Jennings Randolph, a co-sponsor of S. 1480, explained that "we have deleted any reference to joint and several liability, relying on common law principles to determine when parties should be severally liable." 126 Cong. Rec. 30932 (1980); *see also* H.R. Rep. No. 96-1016(1), pt. 1, at 34 (1980) ("Where a defendant establishes that only a portion of the total costs incurred ... may be reasonably attributable to him in light of his activities with respect to hazardous wastes ..., he will be required to pay only the amount of such costs, and the remainder of total costs incurred by the Fund or paid by other liable parties.").[1] CERCLA also established the "Superfund," and California established a similar account, to fund

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[1] "Liability" under CERCLA "shall be construed to be the standard of liability" under the Clean Water Act ("CWA"). 42 U.S.C. §9601(32) (citing 33 U.S.C. §1321). The CWA mandates strict liability but imposes joint and several liability only "'under appropriate circumstances.'" *Chem-Dyne*, 572 F. Supp. at 807 (citation omitted).

remediation of contamination when the responsible party is insolvent or no longer exists. 42 U.S.C. §9611; Cal. Health & Safety Code §§25300-25395.45.

2. The leading case, since followed by all subsequent appellate courts to address the issue, held that Congress intended the scope of liability under CERCLA to be governed by "traditional and evolving principles of common law," as articulated in §433A of the Second Restatement. *Chem-Dyne*, 572 F. Supp. at 807-08, 810.[2] The Restatement provides that "[d]amages for harm are to be apportioned among two or more causes where (a) there are distinct harms, or (b) there is a reasonable basis for determining the contribution of each cause to a single harm." §433A. One illustration suggests that "where the cattle of two or more owners trespass upon the plaintiff's land and destroy his crop," the resulting damages should "be apportioned among the owners of the cattle, on the basis of the number owned by each, and the reasonable assumption that the respective harm done is proportionate to that number." Second Restatement

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[2] When Congress passed the Superfund Amendments and Reauthorization Act in 1986, reforming CERCLA and providing additional funding to the Superfund program, it had a second opportunity to consider CERCLA's standard of liability. The relevant legislative history reaffirmed that "[e]xplicit mention of joint and several liability was deleted from CERCLA in 1980 to allow courts to establish the scope of liability through a case-by-case application of 'traditional and evolving principles of common law' and pre-existing statutory law." H.R. Rep. No. 99-253(I) at 74 (1985), *reprinted in* 1986 U.S.C.C.A.N. 2835, 2856 (citations omitted). The House Energy and Commerce Committee noted that it "fully subscribe[d]" to the court's reasoning in the "seminal case" of *Chem-Dyne*. *Id.*

§433A cmt. d. Another example suggests that if two defendants "operating the same plant, pollute a stream over successive periods," responsibility should be apportioned in proportion to the length of time each operated the facility—on the premise that total pollution would be roughly proportionate to length of operation. *Id.* cmt. c. If no "reasonable basis" for apportionment can be identified, even after making "reasonable assumption[s]" like these, the Second Restatement calls for joint and several responsibility.

II. FACTUAL BACKGROUND

The district court's detailed factual findings, the vast majority of which have not been challenged on appeal, clearly reveal that apportioning the response costs by reference to land area, time of operation, and type of chemical is reasonable and, if anything, overstates the Railroads' share of causal responsibility.

The Arvin Site

B&B began operating an agricultural chemical distribution facility on the 3.8-acre B&B parcel in 1960. Pet.App.-85a. B&B would store, mix, and load into application rigs agricultural chemical products, which it sold to local growers. Pet.App.-88a; JA-247a-48a. B&B was a "sloppy operator," Pet.App.-130a, and its activities ultimately contaminated the soil and groundwater.

B&B stored and distributed the weed killer dinoseb, and the pesticides D-D and Nemagon. Pet.App.-88a. Dinoseb does not evaporate rapidly and has only "moderate solubility" in water. Pet.App.-99a. D-D and Nemagon, by contrast, are volatile chemicals designed to evaporate rapidly and "fume" when

injected into soil, and also are "very soluble" in water. Pet.App.-105a, 100a. A D-D or Nemagon spill is therefore highly likely to evaporate away unless significant amounts of water are present. "In the absence of added water," the district court found, "a spill of at least 500 gallons (on bare soil) or in excess of 10,000 gallons (on intact asphalt), of a volatile chemical such as 1,2-DCP," one of the major constituents of D-D, "would be required ... before a spill would reach groundwater in concentrations sufficient to require a remedial response." Pet.App.-98a-99a. But when a chemical like D-D mixes with water it "could not readily volatize due to the pressure of the water overlying it." Pet.App.-105a.

An overhead photograph showing the geography of the Arvin site appears in the addendum. The B&B parcel was graded toward an unlined pond in the southeast corner (bottom left in the picture). Pet.App.-95a; Add.-2a. B&B installed an unlined sump near a wash rack on its parcel in 1960, which connected directly to the pond. Pet.App.-96a, 111a, 251a; RR SER 342.[3] The sump was approximately 35-by-35 feet across, at least 10 feet deep, and contained several feet of water at any given time. JA-114-15, 118-19. B&B did not line the sump and the pond until 1979. Pet.App.-95a, 111a.

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[3] "RR SER" and "Shell SER" refer to the Supplemental Excerpts of Record filed in the Ninth Circuit by the Railroads and Shell, respectively. "US SER" refers to the Supplemental Joint Excerpts of Record filed by the United States and the State of California.

In 1975, B&B began leasing the 0.9-acre Railroad parcel, located to the west of its property, for $410 a year. Pet.App.-83a, 85a; RR SER 354. The Railroad parcel appears at the top of the photograph, above the warehouses lining the western edge of B&B's property. B&B did not construct a pond, sump, or wash rack on the Railroad parcel. JA-127-28. The Railroad parcel was largely separated from the B&B parcel by the warehouses and by a rail spur. Pet.App.-86a. The district court found that a "small pipe" under the spur allowed surface run-off from the Railroad parcel to drain onto the B&B parcel. Pet.App.-95a.

Differences in the Nature of Operations on the B&B Parcel and the Railroad Parcel

1. The B&B parcel was the heart of B&B's operations, both before and after B&B leased the Railroad parcel. The district court found that most of the "[m]ixing, formulating, loading, and unloading of ag-chemical hazardous substances" occurred there. Pet.App.-247a-48a.

Workers used the wash rack on the B&B parcel to rinse out residual D-D and other chemicals from 2,000 to 2,600-gallon four-wheeled "nurse tanks" and two-ton trucks known as "bobtails" that were mounted with 1,800- to 2,000-gallon tanks. Pet.App.-93a, 111a; 255a. One veteran B&B worker, Lonnie Merryman, testified that during the busy season the wash rack was in use "[p]robably every hour it was open," with three tanker trucks "probably [getting] washed out at least two or three times" every day. JA-130, 133.

These activities discharged an enormous amount of contaminants mixed with water into the sump and surrounding area. As much as 2,000 to 4,000 gallons of

rinse water were dumped into the sump every month. Pet.App.-251a; JA-367. As one worker described it, "everything that [B&B] ever drained out of any tank went into [the sump.] They didn't spare anything. Nemag[o]n, DD, whatever, it all went in there." JA-68-69. Merryman stated that the B&B workers "could never pump [the bobtail truck tanks] completely dry. They would probably have five to ten gallons, sometimes 20 gallons [of D-D] left in a truck." JA-132. This residual D-D either drained into the sump or ran off into the ground next to one of the concrete wash pads. *Id.* The district court calculated that from 1960 to 1983, rinsing out D-D bobtails and nurse tanks at the wash rack resulted in the discharge of 205 and 168 gallons of D-D per year, respectively. Pet.App.-254a-255a.

Tanker deliveries of D-D contributed an additional 81 gallons spilled per year on the B&B parcel. Pet.App.-254a. Merryman said it was difficult to estimate the quantity of such spills; sometimes they "were just a few cupfuls," whereas "other times they would fill a 5-gallon bucket, no problem." JA-125. Finally, the process of loading bobtails on the B&B parcel "resulted in leaks and spills on a daily basis." Pet.App.-254a. The district court estimated that these transfers resulted in a discharge of 7 gallons of D-D per year. Pet.App.-254a.

2. The district court found that during the period covered by the lease B&B only used the smaller Railroad parcel "for vehicle and equipment storage, washing[,] and limited loading-unloading of agricultural chemicals, not active operations or maintenance." Pet.App.-247a. B&B parked "pull rigs" (a 500- or 600-gallon tank mounted on a two-wheel trailer, used to

apply D-D to fields), occasionally parked D-D nurse tanks, stored 55-gallon drums and 5-gallon cans of dinoseb, and temporarily stored empty drums and cans of Nemagon and dinoseb before crushing them on the B&B parcel and sending them off-site. Pet.App.-90a-95a. B&B never kept any permanent bulk storage tanks on the Railroad parcel. JA-128.

Witnesses described the spills on the Railroad parcel as accidental and sporadic events, caused by a broken sight gauge on a D-D rig or the run-off from hosing out the adjacent B&B warehouse before "occasional company barbeques." Pet.App.-91a-92a, 94a. One B&B worker testified that over the course of nearly four years he never saw any ruptured tank, broken line, or spilled chemical on the Railroad parcel. JA-55-56. John Brown, the son of the founder of B&B, testified that he had no "personal knowledge" of *any* D-D spills taking place on the Railroad parcel. JA-222. Brown recalled leaks from the 5-gallon dinoseb cans occurring "[e]very once in a while," or "three or four times at least." JA-347. Spills that others saw were relatively insignificant. When B&B workers checked the filters on D-D nurse tanks—which they did from time to time on the Railroad parcel but preferred to do near the wash rack—resulting spills were about a pint or quart of D-D or less than a gallon of D-D rinsate. JA-140-42. The empty cans and drums stored temporarily on the Railroad parcel also caused only "small leaks." JA-135.

3. The district court took repeated notice of the disparity in activity and spills on the respective parcels—a disparity plainly depicted by the site map and photograph included in the addendum. At the summary judgment hearing before trial, the district

court observed that based on its assessment of the "evidence in gross," the spills on the Railroad parcel likely constituted "less than 10 percent, probably less than 5 percent" compared to the spills on the B&B parcel. JA-76.

After trial, at a hearing on cross-motions to amend the district court's preliminary findings and conclusions, the court observed that, in contrast to the Railroad parcel, the B&B parcel had "loading, formulating, tremendous activities .... [A]ll of the different facilities, the storage tanks, the loading docks, the wash pads, all ... that was at the Brown & Bryant parcel, which was 80 percent of the surface area of the site." JA-611. The court continued that "I think 80 percent would be an understatement of what's going on day in and day out in terms of the spilling, the washing, the introduction of water," and that "the evidence the Court believes showed that there was simply less washing, less surface water that was nonprecipitation introduced to the railroad parcel than there was to the Brown & Bryant site." *Id.* Ultimately, the district court concluded that "[t]he volume of hazardous substance releasing activities on the B&B property is at least ten times greater than any Railroad parcel releases." Pet.App.-251a.

Cause of Harm at the Arvin Site

B&B's activities contaminated the facility's soil and underlying groundwater. Pet.App.-130a. The district court found that the "overwhelming contaminant mass is on and under the B&B parcel." Pet.App.-102a. And the court's detailed findings confirm that its apportionment could not possibly have *understated* the Railroad's share of the harm.

1. Dinoseb was the only contaminant in the surface soils of concern to the United States Environmental Protection Agency ("EPA"). JA-603. The Railroad parcel required *no soil remediation* because any dinoseb concentrations on the parcel were several times below the remediation level set by the EPA. JA-381, 384-85, 411, 604. In fact, the EPA's contractor for the site assessment designated the Railroad parcel as the "clean area" for its mobilization activities. JA-194-97. By contrast, the EPA identified numerous locations with dinoseb spills requiring remediation on the B&B parcel, JA-411, including a dinoseb "hot spot" on the east side of the B&B parcel—with a concentration almost *100 times* the remediation level—that led the EPA to undertake an emergency removal action involving the excavation of 80 yards of soil at a cost of $1.3 million. Pet.App.-137a, 139a, 253a.

2. The bulk of the study and remediation costs at the Arvin site relates to contamination of the underlying groundwater.[4] The soil sampling results

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[4] The district court found that the "primary focus" of the EPA's investigation of the site was groundwater contamination. Pet.App.-145a. Likewise, the "EPA's remedy is primarily directed at a plume of contaminated groundwater that underlies the facility." Pet.App.-172a. One part of the EPA's selected remedy—paving over the site and placing an engineered cap over the sump and the pond—was implemented to control surface water drainage and to reduce the infiltration of rainwater, deterring the transport of contaminants down to the groundwater. Pet.App.-149a. As of December 31, 2007, the EPA had incurred at least $26.6 million in response costs related to the site. EPA, Letter to Railroads Requesting Payment (Aug. 12, 2008). The EPA's expenses moving forward relate entirely to groundwater remediation, and will cost approximately $15.6 million over a ten-year period. EPA, Record of Decision, 2-52 (Sept. 2007), *available*

demonstrated, and the district court found, that *none* of the groundwater contamination resulted from the downward migration of chemicals spilled on the Railroad parcel. Pet.App.-96a-97a. Respondents' own expert "found no evidence of an independent plume of groundwater contamination caused by surface releases on the Railroad parcel." Pet.App.-96a, 101a.

It is undisputed that "the most important variable affecting the downward migration of any chemical substance released at the Arvin site ground surface is the amount of water" present. Pet.App.-97a-98a. The district court's findings show that the vast majority of the spills mingled with water occurred on B&B's parcel. There was no wash station on the Railroad parcel, and the sporadic spills there tended to involve leaks from sight gauges or used drums and cans. *Supra* at 9, 11. On the B&B parcel, by contrast, workers rinsed large quantities of hazardous materials with water and drained them directly into the sump on a daily basis. The sump typically contained standing water and was connected directly to the pond. *Supra* at 8. The district court found that the sump and the pond created a "direct conduit" to the groundwater, and that "[i]t is undisputed that the pond, the sump, and the dinoseb spill area, all of which are located on the B&B parcel, were and are the primary sources of the groundwater contamination at the Site." Pet.App.-104a. "[O]ver 99% of the dissolved and absorbed chemical mass in the A-zone [groundwater] is in the area of the sump and pond." Pet.App.104a-05a.

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at http://yosemite.epa.gov/r9/sfund/r9sfdocw.nsf/ViewByEPAID/CAD052384021?OpenDocument#documents (last visited Nov. 17, 2008).

Respondents nevertheless argued that after a rainfall "surface runoff of water containing dissolved chemicals may have migrated from the Railroad parcel to B&B's waste pond." Pet.App.-102a. The district court found it "plausible" that "some surface spills of chemicals on the Railroad parcel reached the waste pond by down-gradient surface water flow." Pet.App.-102a, 248a. At a minimum, however, its findings demonstrate that the sequence of events necessary for such surface migration is so improbable that spills on the Railroad parcel were significantly less likely to reach the groundwater than spills on the B&B parcel. Pet.App.-87a, 111a-12a.

Respondents' theory depends on rainfall and surface runoff but the Arvin site is located in a desert-like area averaging just six inches of rainfall a year. Pet.App.-87a, 100a. The district court acknowledged that "[c]hemical releases on the Railroad parcel have not been matched with significant rainfall events," and that a "substantial dispute remains whether rainfall at Arvin is sufficient to generate the quantity of runoff that would have been necessary for such transport to occur." Pet.App.-102a. Respondents' own expert estimated that, on any given day, the likelihood of rain sufficient to cause surface runoff was about 7% (while a defense expert placed the estimate at 2%). JA-179, 278. But Respondents did not even contend that these infrequent rainfalls could have *disproportionately* carried contaminants from the Railroad parcel to the pond. Rain would have fallen equally on both parcels, and any runoff from the Railroad parcel would need to travel through the small pipe underneath the rail spur and over more than two hundred feet of land on the B&B parcel to reach the vicinity of the pond. And even

if the runoff contamination from desert rainfall were comparable, the B&B parcel was the site of the washing and rinsing that directly dumped contaminants into the sump—and from there into the pond—on a "*daily*" basis. Pet.App.-252a (emphasis added). So even assuming the government's premises are correct, which is doubtful, the district court's apportionment would still be very conservative with regard to the likelihood that spills on each parcel mixed with water and migrated to the groundwater.

Indeed, the district court found that the D-D contamination on the Railroad parcel was so "slight," in light of that product's high volatility and the Arvin site's overall geography and conditions, that the Railroads should not be apportioned *any* of the responsibility for the D-D component of the groundwater contamination. Pet.App.-251a. The court also explained that the relative concentrations of D-D's chemical constituents found in the groundwater are inconsistent with a "surface spill" origin, and suggest instead that the D-D came from an "underwater" source such as B&B's sump. Pet.App.-105a.

3. The district court's findings also supported its assumption that B&B's activities did not become more harmful during the later period when it leased the Railroad parcel. The district court found that "[i]n the first twenty years of its operations, B&B took almost no precautions to prevent the release of hazardous agricultural chemicals into the environment." Pet.App.-130a. By contrast, only a few years after it began leasing the Railroad parcel, B&B reduced the risk of groundwater contamination by lining the sump and the pond, which were the "primary" sources of the groundwater contamination. Pet.App.-95a, 104a.

Around this time, B&B also installed two "double-lined sand traps" between the sump and the pond, designed to catch sediment flowing from the sump, as well as a "leak detector system" on the north side of the pond. RR SER 315-16; JA-94-95. And the evidence shows that B&B's spill-generating activities were reasonably consistent over time. The district court found that the evidence established "by more than a preponderance that *throughout its operations*, B&B personnel spilled chemicals, allowed chemical leakage, and rinsed down equipment, causing hazardous agricultural chemicals to be released to the environment." Pet.App.-130a (emphasis added). The evidence also indicates that the volume of chemicals purchased by B&B fluctuated from year to year, but was not dramatically higher in later years than earlier ones. For example, B&B's purchases of D-D averaged 94,237 gallons per year from 1960 to 1974 and 104,279 gallons per year from 1975 to 1984. US SER 1019.

III. PROCEDURAL BACKGROUND

District Court Proceedings

1. Investigations by the EPA and California's Department of Toxic Substances Control ("DTSC") drove B&B out of business in December 1988. Shell SER 64-65. In 1989, the EPA listed the B&B facility on the CERCLA National Priorities List. While the limited contamination on the Railroad parcel did not require remediation, in 1991 the EPA ordered the Railroads to take measures to prevent future contamination. Pet.App.-15a. The Railroads spent over $3 million to comply. Pet.App.-161a. In 1996, the EPA and DTSC filed suit under CERCLA against the

Railroads and Shell for reimbursement of their investigation and cleanup expenses. Pet.App.-15a.

2. After a 27-day bench trial, the district court issued an "exceedingly detailed" 185-page opinion. Pet.App.-15a. It found the Railroads liable as owners, and Shell liable as an entity that "arranged" for the disposal of hazardous substances. *See* 42 U.S.C. §9607(a)(3). The court found that the EPA and DTSC had incurred response costs of $7,809,683.46 (as of June 30, 1997) and $401,872.81 (as of March 31, 1998) respectively, not including interest or attorneys fees. Pet.App.-230a-231a. The court also entered a declaratory judgment establishing liability for future costs. Pet.App.-231a.

The district court placed the burden on the defendants "to demonstrate, by a preponderance of the evidence, that there exists a reasonable basis for divisibility." Pet.App.-235a. The court determined that there was "considerable evidence of the relative levels of activity and number of releases on the two parcels," and that "[t]his is a classic 'divisible in terms of degree' case, both as to the time period in which defendants' conduct occurred, and ownership existed, and as to the estimated *maximum contribution* of each party's activities that released hazardous substances that caused Site contamination." Pet.App.-239a (emphasis added).

The court "roughly calculated" the maximum harm causally attributable to the Railroads by multiplying the percentage of the Arvin site owned by the Railroads (19.1%), the percentage of B&B's 29 years of operation that it leased the Railroad parcel (45%), and the percentage of overall site contamination

attributable to Nemagon and dinoseb (66%). That calculation produced an initial apportionment of 6%, which the district court then increased to 9% to account for any "calculation errors up to 50%." Pet.App.-252a. The district court resolved essentially all doubts in Respondents' favor, and correctly recognized that joint and several liability would "take[] strict liability beyond any rational limit." Pet.App.-245a.

Ninth Circuit Proceedings

1. On March 16, 2007, the Ninth Circuit issued an opinion that reversed the district court's apportionment and imposed joint and several liability on the Railroads and Shell. It amended that opinion immaterially in September 2007, and then more substantially in March 2008, in response to petitions for rehearing en banc.

In its September 2007 opinion, the court of appeals agreed that apportionment under CERCLA is governed by federal common-law principles, guided by the Second Restatement and the "seminal case," *Chem-Dyne*, with "slight modifications" to "comport[] with the liability and remediation scheme of CERCLA"—which the Ninth Circuit described as "super-strict." Pet.App.-275a, 277a-79a. The Ninth Circuit concluded, for example, that CERCLA "does not require causation as a prerequisite to liability." Pet.App.-280a.

The Ninth Circuit agreed with the district court that the harm at issue here is theoretically capable of apportionment if the court had "perfect information." Pet.App.-289a-90a. But it held that the Railroads had failed, *as a matter of law*, to establish a "reasonable basis" for apportionment because they did not supply "records that separate out, with any precision, the

amount of toxic chemicals stored on one part of a facility as opposed to another" or "the amount of chemicals stored, poured from one container to another, or spilled on each parcel." Pet.App-290a, 293-94a.

The panel acknowledged that from a business perspective keeping such records "would have had little utility to B&B, the operator of the facility, and none to the Railroads, the owners of the parcel." Pet.App.-294a. Because "[i]t will often be the case that a landowner PRP will not be able to prove in any detail the degree of contamination traceable to activities on its land," the panel recognized, "[t]he net result of our approach to apportionment ... may be that landowner PRPs, who typically have the least direct involvement in generating the contamination, will be the least able to prove divisibility." Pet.App.-296a. The panel thought that outcome acceptable because CERCLA is "not ... concerned with allocation of fault" and because joint and several liability should be "the norm" in order "to assure, as far as possible, that *some* entity with connection to the contamination picks up the tab," rather than the taxpayers. Pet.App.-296a.

Applying those principles, the panel held that geographic apportionment was a "'meat-axe' approach" because the Railroad parcel may have had the "synergistic" effect of enabling B&B to purchase more chemicals and consequently process and spill a higher volume of contaminants *on its own land.* Pet.App.-294a, 293a. The panel acknowledged (inconsistently) that comparisons of "the proportion of the amount of chemicals stored, poured from one container to another, or spilled on each parcel" might nonetheless have been "pertinent." Pet.App.-293a-94a. Despite the

district court's extensive findings about precisely those issues, however, the Ninth Circuit stated that "none of this data is in the record." Pet.App.-294a.

The court of appeals similarly overturned the district court's temporal apportionment, reasoning that it "assumes constant leakage on the facility as a whole or constant contamination traceable to the facility as a whole for each time period," and that "no evidence suggests that to be the case." Pet.App.-295a. Again, the panel ignored the district court's finding that B&B was more careless "[i]n the first twenty years of its operations," which indicates that an assumption of "constant contamination" is reasonable or even conservative. Pet.App.-130a. Finally, the panel held without explanation that the district court committed a "factual error" in determining that any D-D contamination on the Railroad was too "slight" to contribute to the groundwater.

The panel also held Shell strictly liable as an "arranger," and reversed the district court's apportionment analysis (for reasons similar to those deployed against the Railroads) to hold Shell jointly and severally liable. Pet.App.-300a-09a.

2. The Railroads and Shell sought en banc review. The panel amended its opinion to eliminate some of its obviously incorrect statements, but did not modify its basic reasoning or conclusions. *See* Pet.App.-3a-10a.

Eight judges dissented from the denial of rehearing en banc, concluding that the panel's opinion "effectively ... disregard[s]" the Second Restatement test for apportionment, Pet.App.- 59a, 65a, and that the district court's extensive findings "not only provide[] a reasonable basis to apportion liability, but, if anything,

overestimate[] the contamination attributable to the Railroad parcel." Pet.App.-73a. They explained that "[i]f this evidence does not provide a 'reasonable estimate' for apportionment of liability, I do not see how—short of 'perfect information' sufficient to trace every molecule of pollution to the landlord's parcel—apportionment could ever be possible under CERCLA." Pet.App.-59a.

SUMMARY OF ARGUMENT

After a lengthy trial, the district court found that spills on the Railroad parcel could not have been causally responsible for more than 9% of the response costs at the Arvin site. The district court gave Respondents the benefit of every doubt, and its 9% calculation almost certainly overstates the Railroad's responsibility. The Ninth Circuit nonetheless held that CERCLA imposes joint and several liability on the Railroads unless they can provide documentation separating out their causal share with "precision." That reasoning misstates the law and must be rejected.

I. The Ninth Circuit's approach flouts the traditional and evolving common-law principles that Congress intended to govern apportionment under CERCLA. Even during the early twentieth-century heyday of joint and several liability, the common law regarded pollution as the paradigmatically apportionable harm. By the time CERCLA was enacted, the Restatement reflected a broad modern consensus favoring apportionment whenever a reasonable basis can be found for even a rough estimation of each party's causal contribution.

The Second Restatement's examples and illustrations—and the cases upon which they are

based—demonstrate that harms relating to pollution are readily divisible by employing reasonable assumptions, such as that causal responsibility is roughly proportionate to time of operation or percentage of land area. Courts following those common-law principles have applied a pragmatic and flexible approach to apportionment under CERCLA, and have not required "precision" or detailed records that (as the Ninth Circuit conceded) will never actually exist.

II. The district court's apportionment should be reviewed only for clear error, but under any standard of review its conclusions were conservative and amply justified. Proportionate responsibility by geography and time surely overstated the contribution of the Railroad parcel given the district court's findings, and the district court was amply justified in refusing to attribute any significant share of the D-D contamination in the groundwater under B&B's sump and pond to the Railroads. The district court also increased the Railroads' share by half, from 6% to 9%, to account for any possibility that those calculations understated their contribution to the harm. The Ninth Circuit "d[id] not fault the district court's factfinding," Pet.App.-38a, but simply decided that since we cannot be sure whether the Railroads' proper share is 7% or 9% it should be arbitrarily increased to *100%*. Common-law principles do not require such a drastic, arbitrary, and unfair approach to apportionment of responsibility.

III. The Ninth Circuit based its *sub rosa* departure from common-law principles on its own misguided conception of public policy and CERCLA's structure and purposes. This Court has held that to abrogate a

basic common-law principle CERCLA "'must speak directly to the question addressed by the common law'" and "reject" the common-law approach. *United States v. Bestfoods*, 524 U.S. 51, 62-63 (1998) (citation omitted). Congress chose to incorporate common-law apportionment principles and created the Superfund, funded by a special tax on products and industries deemed particularly responsible for pollution, to cover cleanup expenses when the responsible party is insolvent. Congress has since chosen not to renew that tax, which means that some orphaned response costs may be borne by the taxpayers more broadly. The Ninth Circuit has no authority to modify common-law apportionment principles to pursue a different conception of public policy.

Joint and several liability without reasonable causal apportionment threatens to sever the liability of CERCLA defendants from the reasons the statute makes them liable, and would make everything turn on how broadly the "facility" is initially defined by the EPA. Congress provided essentially no guidance on that issue, and there is no evidence that it intended for those determinations to be the tail that wags the dog of liability. The Ninth Circuit's hostility to apportionment also needlessly creates serious questions about CERCLA's constitutionality that adherence to common-law principles would help to avoid.

The Ninth Circuit's decision should be reversed, and the district court's careful apportionment should be reinstated.

ARGUMENT

I. THE NINTH CIRCUIT'S ANALYSIS OF APPORTIONMENT DEPARTS FROM COMMON-LAW PRINCIPLES

CERCLA provides that covered persons "shall be liable" for costs plaintiffs incur in cleanups of contaminated sites but does not specify what portion of the costs are attributable to each defendant. 42 U.S.C. §9607(a)(4). Courts have uniformly held—and the United States agrees—that this terse liability clause incorporates common-law principles governing the apportionment of damages. *See* Opp.-4-5. Congress twice rejected proposals for mandatory joint and several liability under CERCLA, and intended for courts to determine the scope of liability on a "case by case" basis in light of "traditional and evolving principles of [the] common law." *Chem-Dyne*, 572 F. Supp. at 808. This Court is not bound by the law of any particular state, but "develop[s] a uniform federal common law for CERCLA cases." *In re Bell Petroleum Servs., Inc.*, 3 F.3d 889, 897 (5th Cir. 1993).

While the common law's approach to joint and several liability has evolved over time, it has consistently encouraged apportionment of defendants' liability for commingled pollution based on reasonable assumptions and rough estimates. There has never been, and never should be, any requirement for "precision" or documentary proof.

A. Traditional And Evolving Common-Law Standards Permit Rough Apportionment Of Responsibility For Pollution Based On Reasonable Assumptions

The common law governing causal apportionment of damages has become steadily more pragmatic over time. While joint and several liability was common prior to the twentieth century, modern case law increasingly favors apportionment. Then as now, however, the law has recognized pollution as the *paradigmatic* apportionable harm, and has permitted apportionment based on assumptions permitting even a rough estimate of relative responsibility.

1. The First Restatement generally provided that any tortfeasor whose conduct "is a substantial factor in causing a harm to another is liable for the entire harm." Restatement of Torts §879 (1939) ("First Restatement"). The First Restatement's preference for joint and several liability was controversial even at the time. Prosser argued that it was an artifact of the obsolete "common law concept of the unity of the cause of action," and that joint and several liability should be imposed only when "no logical basis can be found for apportionment of damages"—in other words, "only when there is no reasonable alternative." William L. Prosser, *Joint Torts and Several Liability*, 25 Cal. L. Rev. 413, 418-20, 442-43 (1937). "[A] considerable body of case law authorizing apportionment of similar or single harms" already existed at the time. Gerald W. Boston, *Apportionment of Harm In Tort Law: A Proposed Restatement*, 21 U. Dayton L. Rev. 267, 288 (1996) (hereinafter, "Boston"); *see also* Restatement (Third) of Torts: Apportionment of Liability §26,

Reporters' Note at 333, 329 (2000) ("Third Restatement") (describing Boston's article as an "excellent history" with "excellent analysis").

Prosser's preference for apportionment initially prevailed in only one area: nuisance. The Ninth Circuit wrongly believed that apportionment is the "exception" in pollution cases, Pet.App.-43a, but §881 of the First Restatement actually *mandated* apportionment of nuisances like pollution, stating that where "two or more persons" interfere with a "landowner's interest in the use and enjoyment of land ... each is liable only for such proportion of the harm caused ... as his contribution to the harm bears to the total harm." This rule applied "whether or not there has been a physical or chemical union of materials and whether or not fumes or polluted matter sent out by the defendant have united with those sent out by others." *Id.* cmt. a. The illustrations accompanying §881 reflected Prosser's view that courts were required "to attempt some rough apportionment of the damages" in pollution cases. 25 Cal. L. Rev. at 442-43.

2. The Second Restatement represents the eventual broader triumph of Prosser's view, and provides for apportionment of *all* unitary harms, so long as "there is a reasonable basis for determining the contribution of each cause to a single harm." §433A(1)(b). Prosser was the Reporter, and he "drafted the language of section 433A to comport with his treatise." Boston, *supra*, at 292. And although the new §433A covers all torts, nuisances like pollution are still treated as the paradigmatic divisible harm. Comment d, which analyzes "divisible harm," explains that "apportionment is commonly made" in cases where "pollution of a stream, or flooding, or smoke or dust or

noise, from different sources, has" caused a nuisance, even though such harm is not "clearly marked out as severable into distinct parts." *See also* W. Page Keeton et al., *Prosser & Keeton on The Law of Torts* §52 (5th ed. 1984) (same); Boston, *supra*, at 301 (comment d's "illustrations demonstrate the continued vitality of the proportional liability rules transplanted from section 881 of the first *Restatement*"); *United States v. Alcan Aluminum Corp.*, 964 F.2d 252, 269 n.27 (3d Cir. 1992) (noting parallel between comment d and CERCLA water pollution cases). The Reporter's Notes to the Second Restatement also continue to cite the cases underlying the First Restatement's conclusion that apportionment is mandatory in nuisance cases. *See* Second Restatement §433A Reporter's Notes at 140-41 (App. III 1966); *Seely v. Alden*, 61 Pa. 302, 306 (1869) (holding that when a defendant's pollution has commingled with others' his "deposit must be separated by means of the best proof the nature of the case affords, and his liability ascertained accordingly").

Section 433A does not require parties to divide causal responsibility with anything approaching "precision" or detailed "records." Pet.App.-41a. A party need only present evidence showing a "reasonable" and "rational" basis for a "rough estimate," or a "fair apportionment among the causes responsible." §433A(1)(b) & cmts. b, d. For example, when cattle owned by two or more defendants destroy a plaintiff's crop, the harm may be apportioned among the defendants "on the basis of the number owned by each, and the *reasonable assumption* that the respective harm done is proportionate to that number." §433A cmt. d (emphasis added). Similarly, when

dogs—three of which are owned by one defendant, and two by another—kill ten of the plaintiff's sheep, it is reasonable to hold the former owner liable for six sheep and the latter four, based solely on evidence that "the dogs are of the same general size and ferocity." *Id.* cmt. d, illus. 3.

In the common-law cases relied upon by the Restatement, the plaintiff usually bore the burden of proving the damages caused by each defendant, and argued for joint and several liability on the ground that the evidence did not reveal any reasonable basis for dividing the harm. The courts rejected that argument, permitting the plaintiff to recover based on rough assumptions about each defendant's divisible share, and denying joint and several liability on the same basis. In *Little Schuylkill Navigation, Railroad & Coal Co. v. Richards's Administrator*, 57 Pa. 142 (1868), for example, multiple mines dumped coal dirt into the same stream over a period of eight years. The plaintiff sought to hold one mine liable for the entire harm, claiming that several liability would present insurmountable problems of proof. The court refused, recognizing that "it may be difficult to determine how much dirt came from each [mine], but the relative proportions thrown in by each may form some guide." *Id.* at 147. And when estimates were uncertain, a factfinder "would measure the injury of each with a liberal hand" to ensure the plaintiff was not undercompensated. *Id.*[5]

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[5] *See also Thomas v. Ohio Coal Co.*, 199 Ill. App. 50, 56 (1916) (same); *Hughes v. Great Am. Indem. Co.*, 236 F.2d 71, 75 (5th Cir. 1956) (rejecting plaintiffs' argument that joint and several liability

The Second Restatement thus adopts a pragmatic symmetry, under which "an approximation to accuracy" in the estimation of relative causal responsibility suffices because a plaintiff "is not to be denied all damages, nor [a defendant] loaded with damages to which he is not legally liable, simply because the exact ascertainment of the proper amount is a matter of practical difficulty." *Sellick v. Hall*, 47 Conn. 260, 274 (1879). Second Restatement §912, which requires a plaintiff to prove damages only with "as much certainty as the nature of the tort and circumstances permit," reinforces that symmetry by echoing the pollution and crop damage examples from §433A. *See also* §912 cmt. c, illus. 3 & 5.

Courts have held, in most contexts, that CERCLA implicitly shifts the burden of proof on causation and requires the *defendant*, rather than the plaintiff, to prove a reasonable basis for dividing the damages. Even if true, that shift does not change the level of certainty required. Indeed, the Second Restatement contemplates situations in which the defendant bears the burden at common law, *see* §433B(2), and explains that he must prove "a reasonable basis for the apportionment but he is not required to establish [it] with any greater degree of definiteness or certainty" than applies when the burden is on the plaintiff, §912

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should be imposed because it would be "impossible" for them "to make proof which would segregate the injuries" from automobile collisions three minutes apart, and holding that "[d]amages do not have to be established with mathematical certainty" so long as there was a "reasonable basis" for estimating damages that "probably ensue[d]" from the second collision), *cert. denied*, 352 U.S. 989 (1957).

cmt c. The Second Restatement specifically refers to cases in which multiple defendants harm another's land as an example of when the burden is on the defendant, but the substantive analysis is nonetheless the same. *See* §433B cmt. d, illus. 7.

The cases serving as models for §433A's illustrations completely refute the Ninth Circuit's suggestion that hard "data ... in the record" sufficient to "separate out, with any precision" a defendant's share was necessary to avoid joint and several liability at common law. Pet.App.-41a. In one of the cases underlying the example about cattle trampling crops, for instance, the court acknowledged that "[t]here is nothing in the findings or testimony tending to show how much of this damage was done by any specific cattle, and in the nature of things it could not well be shown." *Powers v. Kindt*, 13 Kan. 74, 76 (1874). As the Restatement explains, "reasonable assumption[s]" are enough. And those assumptions can be based on approximations drawn from witness testimony. For example, in another case cited by the Reporter's Notes, *Hill v. Chappel Brothers of Montana, Inc.*, 18 P.2d 1106 (Mont. 1932), the court apportioned harm from overgrazing on the plaintiff's land on the basis of testimony that witnesses saw what seemed to be "between 7,000 and 8,000" of the defendant's horses grazing over a three-year period, although "[o]ther steeds, owned [by others] or ownerless ... kept [defendant's horses] company in goodly numbers," in estimated proportions of "six-tenths to one-tenth of the whole" throughout that time. *Id.* at 1108. (Presumably that testimony was based on a rough sense gained by observing brands on particular animals.) The court held that "[w]here the injury occasioned by the tortious

act of a defendant is indistinguishable from that arising from a like act of others, ... the jury, as reasonable men, [should] make from the evidence the best possible estimate" of causal responsibility. *Id.* at 1110.[6]

3. If this Court chooses to consider developments in the law after the Second Restatement, they merely confirm and extend the common law's preference for apportionment and hostility to joint and several liability.

For example, courts are increasingly willing to apportion damages for injuries that the Second Restatement would have considered theoretically indivisible, like cancer or death, on the basis of rough, statistical estimates of the parties' relative causal responsibility. *See, e.g., Dafler v. Raymark Indus.*, 611 A.2d 136 (N.J. Super. 1992) (dividing causation of lung cancer between asbestos and plaintiff's smoking), *aff'd*, 622 A.2d 1305 (N.J. 1993); *Sauer v. Burlington N. R.R.*, 106 F.3d 1490 (10th Cir. 1996) (defendant's share of liability reduced in light of plaintiff's preexisting condition); *Stahl v. Ford Motor Co.*, 381 N.E.2d 1211

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[6] The court in *Thomas v. Ohio Coal Co.* similarly apportioned responsibility among oil companies for draining salt water and oil onto the plaintiff's property on the basis of testimony "that out of something over eighty wells" nearby, eighteen were the defendant's, and that the defendant's wells "were among the strongest and heaviest producers." 199 Ill. App. at 56-57. And in *Griffith v. Kerrigan*, 241 P.2d 296, 298 (Cal. App. 1952), a court apportioned liability for a flood between one defendant's canal and another's irrigated field based on expert testimony that "was largely guesswork, but was the best he could do, and was based on a consideration of comparative area, comparative head, and other physical factors."

(Ill. App. Ct. 1978) (manufacturer strictly liable only to extent design defects aggravated injuries from auto accident). Courts also readily apportion causal responsibility in strict liability cases based on probabilistic assumptions, as opposed to hard proof. *See, e.g., Sindell v. Abbott Labs.*, 607 P.2d 924 (Cal.) (apportioning strict products liability based on defendant's market share), *cert. denied*, 449 U.S. 912 (1980). And courts have increasingly permitted factfinders to assess comparative fault in cases where different defendants are liable for reasons that are superficially incommensurable with regard to fault and causation, such as negligence and strict liability. *See, e.g., Sandford v. Chevrolet Div. of Gen. Motors*, 642 P.2d 624 (Or. 1982) (responsibility of strictly liable manufacturers and negligent driver are comparable); Third Restatement §8 & cmt. a.

The Third Restatement embraces those trends and calls for factfinders to allocate comparative "responsibility" for harm in almost all cases. *See* §26 cmt. a; §1 cmt. a. The Third Restatement offers these "rules and principles" as a guide when a statute "calls for courts to develop common-law principles to fill in unanswered questions about apportionment of liability among multiple parties," and specifically references CERCLA as an example. *See* §1, Reporters' Note at 17; *cf. Norfolk S. Ry. v. Sorrell*, 127 S. Ct. 799, 807-08 (2007) (relying on Third Restatement).

B. Courts Correctly Applying These Principles In CERCLA Cases Permit Apportionment Based On Reasonable Assumptions

CERCLA apportionment cases are surprisingly rare, particularly at the appellate level, because of the overwhelming pressure on PRPs to settle with the government. But several decisions have applied a pragmatic and flexible approach to apportionment, consistent with the Second Restatement.

In *Bell Petroleum*, for example, the Fifth Circuit reversed a district court's rejection of apportionment, explaining that so long as "expert testimony and other evidence establishes a factual basis for making a reasonable estimate that will fairly apportion liability, joint and several liability should not be imposed in the absence of exceptional circumstances." 3 F.3d at 903. Even though many records cataloging the disposal of pollutants that entered the water supply had been "destroyed," the court held that witness testimony and reasonable "assumption factors" regarding the defendants' activities sufficed. *Id.* at 903-04 & n.17. Similarly, despite the fact that testimony presented diverging methods of dividing the harm, offered "conflicting" evidence, and relied on assumptions, *Bell Petroleum* found apportionment proper because the Restatement requires not "certainty," but rather "evidence sufficient to permit a rough" or "reasonable and rational approximation of each defendant's individual contribution to the contamination." *Id.* at 903-04 & nn.18, 19.

Coeur D'Alene Tribe v. Asarco Inc., 280 F. Supp. 2d 1094 (D. Idaho 2003), similarly allowed reasonable

estimates to divide liability for lead, cadmium, and zinc tailings that 22 mines had deposited in a river basin over 100 years. The "exact percentages" of metals in the tailings were "unknown" and varied over time, and calculation of the PRPs' disposals was "not an exact science." *Id.* at 1120. The relative shares were therefore "based on best available information," including "historical information available regarding the milling methods used" and adjustments for various remedial steps the mines took over the years. *Id.* at 1120, 1105 & n.9. The court found the experts' assumptions "reasonable" based on the available evidence and explained that the Restatement does not require "fingerprinting of each mill's hazardous waste ... in this particular case which spans multiple decades, changes [in] processing method, and changes in ownership." *Id.* at 1120.

Respondents have recognized that apportionment based on reasonable estimates and assumptions is proper, at least when they face potential CERCLA liability. In *Kamb v. United States Coast Guard*, 869 F. Supp. 793, 798 (N.D. Cal. 1994), Respondents were PRPs by virtue of Coast Guard and police personnel's "contamination" of a shooting range with lead bullets. Relying on *Bell*, Respondents persuaded the court that joint and several liability was inappropriate because, among other things, "the volume of lead ... contributed to the Site" gave a reasonable basis for apportionment. *Id.* at 799. *Kamb* did not flyspeck Respondents' evidence estimating their share, and ruled in Respondents' favor despite deferring "final

determination" of the "pro rata share of the response costs." *Id.*[7]

The CERCLA cases that are hostile to apportionment tend to fall into two categories. First, many CERCLA cases involve genuinely synergistic harms that are, in the Second Restatement's terms, *theoretically* indivisible. In *United States v. Monsanto Co.*, wastes from "numerous off-site waste producers" were haphazardly deposited on the site, "generating noxious fumes, fires, and explosions," as well as a "toxic cloud" that led to the hospitalization of twelve firemen. 858 F.2d 160, 164 (4th Cir. 1988). Given this clear evidence of interactive consequences, *Monsanto* declined to apportion harm absent evidence about the "relative toxicity, migratory potential, and syngergistic capacity of the hazardous substances." *Id.* at 172 & n.26.

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[7] Similarly, in *United States v. Shell Oil Co.*, the Army and Shell deposited wastes through a common sewer built by the Army, resulting in a release of commingled contaminants. 605 F. Supp. 1064, 1067 (D. Colo. 1985). Sued under CERCLA and fearing joint and several liability, Shell sought to join the Army as a co-defendant. Apparently in opposing joinder, the United States represented that, as a CERCLA plaintiff, "it only seeks payment from Shell for Shell's proportionate share of the cleanup." *Id.* at 1083 n.9. Relying on the Second Restatement and the government's position, the court concluded that "non-joinder will not subject Shell to any risk of increased or multiple liability" because apportionment appeared proper. *Id.*; *see also Price v. United States Navy*, 818 F. Supp. 1326, 1332 (S.D. Cal. 1992), *aff'd in relevant part*, 39 F.3d 1011, 1018 (9th Cir. 1994) (Navy liable under §107(a) as transporter-PRP for only percentage of response costs).

Some of the decisions invoke but misapply that principle, under the misapprehension that commingled waste always gives rise to synergistic and indivisible harm. *Compare, e.g., O'Neil v. Picillo*, 883 F.2d 176, 183 n.11 (1st Cir. 1989) ("Because there was substantial commingling of wastes, ... any attempt to apportion the costs incurred by the state in removing the contaminated soil would necessarily be arbitrary"), *cert. denied*, 493 U.S. 1071 (1990), *with United States v. Hercules, Inc.*, 247 F.3d 706, 718 (8th Cir.), *cert. denied* 534 U.S. 1065 (2001) ("'commingling is not synonymous with indivisible harm'") (citation omitted). That conclusion is inconsistent with both the First and Second Restatements, which expressly authorize apportionment of harm to polluted streams, or harm caused by intermingled floodwaters. *See also* Boston, *supra*, at 313-14 (noting that under §433A and comment d, "[m]any single injuries can be apportioned because" their causes "are amenable to some rational comparison").

Second, other CERCLA cases involve such a large number of PRPs, engaged in polluting activity about which so little is known, that apportionment would be nothing but a blind guess. In *O'Neil*, for example, the site consisted of "massive trenches and pits 'filled with free-flowing, multi-colored, pungent liquid wastes' and thousands of 'dented and corroded drums containing a veritable potpourri of toxic fluids'" that culminated in a "monstrous fire." 883 F.2d at 177 (quoting district court opinion). "[M]ost of the waste could not be identified," making apportionment among parties impossible. *Id.* at 182. That is not this case.

II. THIS DISTRICT COURT DID NOT CLEARLY ERR BY FINDING A REASONABLE BASIS TO APPORTION LIABILITY

This case has none of the attributes that have prevented apportionment in prior CERCLA cases. The Ninth Circuit held under *de novo* review that the contamination is theoretically apportionable.[8] Respondents do not contest that conclusion, and it is plainly correct. Pet.App-36a-37a; Opp.-25. There are no synergistic effects among the chemicals. D-D, Nemagon, and dinoseb are each organic compounds and the EPA's remedy can treat all three chemicals with a common process.[9] There also was no disagreement with the conclusion of the Railroads' expert "that costs for remediating impacts to groundwater can be calculated as a divisible share of the total chemical mass present in the groundwater." JA-287; *see also* JA-355-64.

Apportionment in this case therefore comes down to whether a "reasonable basis" can be found for a rough estimate of the proportion of the overall

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[8] As the Third Restatement explains, and as the Sixth Circuit has held, the question of whether a harm is theoretically apportionable is so closely related to the facts that it should be reviewed for clear error. *See United States v. Twp. of Brighton*, 153 F.3d 307, 317-18 (6th Cir. 1998); Third Restatement §26 cmt. h.

[9] The selected groundwater remedy included a granulated activated carbon treatment system to remove the contamination from the water for disposal offsite. *See* Pet.App.-149a; *see also* JA-288-89 ("[A]ll of the chemicals that were detected in the A zone groundwater can be treated by a common, conventional technology known as granular activated carbon ....").

response costs attributable to spills originating on the Railroads' parcel. The district court's affirmative conclusion is entitled to deference—but under any standard of review the evidence here was more than sufficient to permit apportionment.

A. The District Court's Apportionment Should Be Reviewed For Clear Error

The district court found that the evidence provided a reasonable basis for causal apportionment. That finding should be reviewed for clear error, and it is not clearly erroneous. The Ninth Circuit purported to apply the clear error standard but, in a move that the dissenters appropriately characterized as "sleight of hand," eliminated any deference to the district court by reviewing de novo whether the Railroads met their burden of proof as a matter of law. Pet.App.-65a, 35a. That maneuver should be rejected.

"The question of whether the defendants are jointly or severally liable for the cleanup costs turns on a fairly complex factual determination." *Chem-Dyne*, 572 F. Supp. at 811. Once a court determines, as here, that a harm is capable of division in principle, the Second Restatement provides that the *factfinder* should decide the "apportionment of the harm to two or more causes." §434(2)(b). Apportionment represents a factual judgment about the evidence, and the assignment of particular shares cannot meaningfully be separated from the factfinder's implicit conclusion that those shares reasonably approximate the defendant's contribution to the harm under the evidence. *Cf. Chem-Dyne*, 572 F. Supp. at 811 (denying summary judgment on apportionment because genuine issues of material fact remained). An appellate court may

reverse as a matter of law only if no reasonable factfinder could apportion the harm based on the evidence. Second Restatement §434(1)(c).

The Third Restatement is both clear and persuasive on this issue. "[D]etermining whether a plaintiff's damages are divisible often depends on careful attention to facts." §26, Reporters' Note at 336. Accordingly, the Third Restatement treats as a question of fact "[w]hether damages are divisible" and "[t]he magnitude of the divisible part." §26 cmt. h. Apportionment is "determined as a matter of law" only when "there is no dispute or when no reasonable jury could find otherwise." §26, Reporters' Note at 329.

As explained above, the proof necessary for apportionment and the proof necessary for a plaintiff to prove damages with reasonable certainty are frequently two sides of the same coin. Courts have long treated a factfinder's conclusions regarding reasonable certainty of damages as findings of fact reviewed for clear error. *See, e.g., Merrill Stevens Dry Dock Co. v. M/V Yeocomico II*, 329 F.3d 809, 816 (11th Cir. 2003) ("We find no clear error in the district court's application of the reasonable certainty standard to the evidence presented."); *accord Fifth Third Bank v. United States*, 518 F.3d 1368, 1374-75 (Fed. Cir. 2008); *Durasys, Inc. v. Leyba*, 992 F.2d 1465, 1470 (7th Cir. 1993); *Royal College Shop, Inc. v. N. Ins. Co. of N.Y.*, 895 F.2d 670, 679 (10th Cir. 1990); *Marcona Corp. v. Oil Screw Shifty III*, 615 F.2d 206, 209-10 (5th Cir. 1980). This Court employed that approach under the Sherman Act in *Zenith Radio Corp. v. Hazeltine Research, Inc.*, 395 U.S. 100, 125 (1969), explaining that the jury's damage award would be disturbed for insufficiency of the evidence only if no jury could reasonably infer this

"causal relation between the [defendant's] conduct and the claimed damage."

B. The District Court's Apportionment Was Not Clearly Erroneous

The district court's apportionment was not clearly erroneous, and indeed should be affirmed even if review is de novo. The district court correctly determined that these facts present a "classic 'divisible in terms of degree' case," Pet.App.-239a, where the Railroads' approximate causal share of the harm may be estimated by reference to geographic, temporal, and other factors. The court evaluated the extensive historical and scientific evidence and concluded that the Railroads' share could not possibly exceed 9%. That evidence is substantially better—in terms of quantity, reliability, and precision—than the evidence relied upon by many of the common-law cases underlying the Restatement. And neither Respondents nor the Ninth Circuit challenge the core factual findings.

- ***Geography***

There is a long tradition of geographic apportionment in pollution cases, and such divisions are eminently sensible under a statute that imposes strict liability *tied to ownership of land. See, e.g., Hercules*, 247 F.3d at 717-18. Geography provides a reasonable proxy for relative responsibility here so long as (1) spill-producing activities on the defendant's land were proportionate to land area, or less; and (2) the spills on the defendant's land were not more likely to cause remediable harm than spills elsewhere. The record evidence clearly supports the district court's finding that relative land area if anything *overstates* the Railroads' share of responsibility here.

First, the district court reviewed "considerable evidence of the relative levels of activity and number of releases on the two parcels," Pet.App.-252a, and found that the Railroad parcel was used much less intensively than the B&B parcel. The district court found that "[t]he volume of the hazardous substance releasing activities on the B&B site is at least ten times greater," Pet.App.179a, and that the activities "contribut[ing] most of the liability causing releases, were predominantly carried out by B&B on the B&B parcel," Pet.App.247a-48a. *See generally supra* at 9-12. The district court could not document the volume of contamination with precision, but it was entitled to credit and roughly quantify based on the testimony of witnesses who explained the character of the activity and spills, and to draw conclusions based on "'common sense and sound judgment.'" *Hughes*, 236 F.2d at 75 (quoting *Schulz v. Pa. R.R.*, 350 U.S. 523, 525 (1956)); *see Bell Petroleum*, 3 F.3d at 902-04; *Coeur D'Alene*, 280 F. Supp. 2d at 1120; *Kamb*, 869 F. Supp. at 799.[10]

Second, the scientific evidence clearly showed (and the district court found) that spills on the Railroad parcel were much *less* likely to have contributed to the

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[10] The district court also found that while "[t]here is no evidence to quantify the difference in volume of the releases, ... the Railroad parcel could not have contributed to more than 10% of the volume or mass of the overall site contamination." Pet.App.-252a. That finding appears in a paragraph consistently directed at activities during the lease period, and thus indicates that spills on the Railroad parcel likely accounted for less than 5% of B&B total spills by volume. Although the district court chose to rest its apportionment on other grounds, that volumetric finding provides additional confirmation that his calculations were conservative.

harms that required remediation than spills on the B&B parcel. None of the dinoseb contamination that required soil remediation was on the Railroad parcel. *Supra* at 12-13. And the groundwater contamination that was the primary driver of the cleanup originated entirely from the sump and pond on the B&B parcel. *Supra* at 14. The district court credited as "plausible" Respondents' theory that *some* of the spills on the Railroad parcel could have been carried to the pond, and from there down into the groundwater, via surface runoff. But there can be no serious dispute that the typical spill on the Railroad parcel was far *less* likely to reach the pond or the sump, on a volume-by-volume basis, than the typical spill on the B&B parcel. *Supra* at 15-16.

The Ninth Circuit suggested that geographical apportionment was a "'meat-axe' approach" here because B&B's usage of the Railroad parcel as a parking and storage lot may have had the "synergistic" effect of enabling B&B to purchase more chemicals and consequently process and spill a higher volume of contaminants *on its own land*. Pet.App.-294a, 293a. As the dissenting judges observed, these "synergies" were the product of the Ninth Circuit's speculation in contravention of the district court's findings. *See* Pet.App.-70a-72a. In any event, the Ninth Circuit's reasoning would preclude geographic apportionment in nearly every case, and is inconsistent with the basic premises of landowner liability under CERCLA. The statute imposes strict liability on passive landowners for disposals of hazardous substances on their land—not for disposals of hazardous substances *elsewhere* that were somehow enabled by activities on that land. In *General Electric Co. v. AAMCO Transmissions*,

Inc., 962 F.2d 281, 287-88 (2d Cir. 1992), for example, the Second Circuit explained that the lessor of a service station is not liable for damage caused by his lessee's disposal of hazardous substances generated at the leased premises but disposed of elsewhere. Even if a landlord "had the opportunity or ability to control [its lessee's] waste disposal practices" off the leased property, it has no obligation to do so. *Id.* at 286.

- **Time**

The district court also correctly held that any estimation of the Railroads' causal responsibility must reflect the fact that B&B leased the Railroad parcel for only 45% of its entire period of operation at the Arvin site. Pet.App.-251a. Once again, temporal apportionment finds ample support in the Restatement and common law. *See* Second Restatement §433A cmt. c ("Thus if two defendants, independently operating the same plant, pollute a stream over successive periods, it is clear that each caused a separate amount of harm, limited in time, and that neither has responsibility for the harm caused by the other."); *Midland Empire Packing Co. v. Yale Oil Corp.*, 169 P.2d 732 (Mont. 1946) (cited in §433A Reporter's Notes at 139 (App. III 1966)) (same); *Bell Petroleum*, 3 F.3d at 903-04 (apportioning liability of successive operators).

The Ninth Circuit held that temporal apportionment wrongly "assumes constant leakage on the facility as a whole or constant contamination traceable to the facility as a whole for each time period," and that there was an "evidentiary vacuum" (meaning precise records) concerning contamination prior to the lease period. Pet.App.-42a. In fact, the

record is replete with evidence of spills pre-dating 1975 on B&B's parcel.[11] The district court found, for instance, that "B&B washed out bobtails and nurse tanks at an unlined sump on the B&B parcel from the early 1960s until the sump was lined in 1979." Pet.App.-111a; *see also* Pet.App.-115a ("The bulk storage of corrosive D-D in the 1960s ... caused numerous tank failures and spills."); JA-219 (B&B used the unlined sump as early as 1964). And the evidence indicates that B&B's activities were generally consistent over time, but that B&B took *greater* precautions during the period following the lease of the Railroad parcel. *Supra* at 16-17. As the dissenters from the denial of hearing en banc recognized, in this case a strict temporal apportionment "if anything, *overestimates* the contamination attributable to the Railroad parcel." Pet.App.-73a.

- **Distinguishing Among Contaminants**

The district court also applied a one-third discount to reflect its finding that the D-D contamination on the Railroad parcel did not contribute significantly to the remediable harm. Pet.App.-251a. The Ninth Circuit dismissed this calculation as "a basic factual error" because the evidence suggests that "there may well have been leakage on the Railroad parcel of D-D." Pet.App.-42a.

The Ninth Circuit missed the point. The district court recognized that there was some D-D

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[11] There is no allegation that B&B used or released any contaminants on the Railroad parcel prior to B&B's lease in 1975. JA-72; Pet.App.-83a.

contamination on the Railroad parcel, but characterized it as "slight." Pet.App.-251a. The only soil remediation that the EPA found necessary was attributable to *dinoseb* and confined to the B&B parcel. And the district court had ample grounds for concluding—in light of D-D's extreme volatility, the low rainfall, the site geography, and the proportions of chemical constituents found in the groundwater—that even if some D-D might have been carried to the pond by surface runoff from the Railroad parcel, such surface migration did not contribute to the groundwater contamination to any significant extent. *See supra* at 16. The Ninth Circuit did not explain why that conclusion was clearly erroneous, and the brief in opposition conspicuously declined to respond to the petition's demonstration that it was not. *Compare* Railroads' Pet.-22 n.3 *with* Opp.-12 n.4.

As the en banc dissenters observed, even if the district court did err on this point "[i]t has no impact on the ultimate conclusion that the Railroads cannot be jointly and severally liable for the entire cleanup cost," and would "merely alter[] the proportion of liability attributable to the Railroads and perhaps ... be a basis for remand." Pet.App.-74a n.19. Even a remand would be unnecessary because, as discussed below, the district court built a safety margin into its apportionment that is precisely the same size as the D-D issue.

- **Safety Margin**

The geographic, temporal, and chemical considerations discussed above led the district court to estimate the Railroads' proportion of the site's cleanup costs at 6%. Pet.App.-252a. Even though this figure

was a product of conservative assumptions, the district court chose to increase it by 50% to allow for any "calculation errors," bringing the total apportionment to 9%. *Id.* Like the common-law cases cited in the Restatement, the district court assessed the Railroads' responsibility with a "liberal hand," to ensure that the Railroads were not paying less than their fair share. *See Thomas*, 199 Ill. App. at 56.

That flexibility guarantees that any uncertainty in the evidence supporting apportionment does not prejudice Respondents in any way. Indeed, neither Respondents nor the Ninth Circuit put forward any real argument that the Railroads' share of the harm *exceeds* the 9% apportioned by the district court. Their position seems to be that since the correct number *below 9%* cannot be determined with great precision and confidence, the Railroads' share should be grossed up to *100%*. Neither the common law nor common sense supports that result.

III. NOTHING ABOUT CERCLA'S STRUCTURE OR POLICIES JUSTIFIES ABANDONING THE COMMON LAW'S APPROACH TO APPORTIONMENT

The Ninth Circuit believed its *sub rosa* abrogation of the common law to be justified by CERCLA's "imposition of no-fault land ownership liability," Pet.App.-41a, and by the court's belief that apportionment "would leave the taxpayers holding the bag" in violation of CERCLA's "basic structure," Pet.App.-34a. The Ninth Circuit's reasoning is incorrect, and its approach embraces a conception of the public policies underlying CERCLA that Congress

explicitly rejected, and that unnecessarily amplifies doubts about the statute's constitutionality.

A. CERCLA's Strict Liability Regime Is Not Inconsistent With Apportionment

The Ninth Circuit wrongly believed that a pragmatic approach to apportionment would be "tantamount to a disagreement with the imposition of no-fault land ownership liability" under CERCLA. Pet.App.-41a. As the dissenting judges recognized, however, "[s]trict liability is *not* mandatorily joint and several liability." Pet.App.-67a n.12 It is undisputed that Congress considered, and squarely rejected, a regime of mandatory joint and several liability under CERCLA. And while CERCLA may alter common-law notions of causation in some limited respects, Congress never intended to hold every PRP liable for every environmental harm, without any constraints.

Indeed, the basic apportionment problem in this case is created not by the "strict" nature of CERCLA liability but by the broad discretion the statute gives the EPA to define the boundaries of the "facility" for which all of the covered persons are responsible. *See, e.g.*, 42 U.S.C. §9607 (defining covered persons as those who, *inter alia*, owned, operated, or arranged for disposal at a "facility"); *id.* §9601(9)(B) (defining "facility" as "any site or area where a hazardous substance has been deposited, stored, disposed of, or placed"). The Railroads are strictly liable here because of their ownership of land. By refusing apportionment, however, the Ninth Circuit effectively held the Railroads strictly liable as landowners for the consequences of disposals of hazardous materials *on land they did not own.* The Railroads' only connection

to the contamination originating on B&B's parcel is that the EPA chose to describe the Arvin site as one "facility" rather than two.

Designating a facility "'is simply the first step'" in the CERCLA process, and its purpose "'is to identify, quickly and inexpensively, sites that may warrant further action,'" *Honeywell Int'l Inc. v. EPA*, 372 F.3d 441, 445 (D.C. Cir. 2004) (citations omitted), not to "'assign liability to any person,'" *Eagle-Picher Indus., Inc. v. EPA*, 759 F.2d 905, 920 (D.C. Cir. 1985) (citation omitted). Courts have long recognized that the "facility" concept is "intentionally expansive." *United States v. Conservation Chem. Co.*, 619 F. Supp. 162, 185 (W.D. Mo. 1985). Challenges to designation of a site as a "facility" on the National Priorities List are limited to judicial review within 90 days under a deferential arbitrary-and-capricious standard, well-before any response or recovery action, if any, by the EPA. 42 U.S.C. §9613(j)(2). The EPA generally does not specify "any exact geographic boundaries" to a facility at the listing stage and is free to expand the boundaries after its designation. *See Wash. State Dep't of Transp. v. U.S. EPA*, 917 F.2d 1309, 1310-11 (D.C. Cir. 1990), *cert. denied*, 501 U.S. 1230 (1991). Thus, challenges to the boundaries of a "facility" generally occur in cost recovery actions, where courts "have uniformly refused to divide widely contaminated properties like the one at issue here into separate facilities in response to a party's claim to be responsible for contamination in only certain parts of the property." *Axel Johnson, Inc. v. Carroll Carolina Oil Co.*, 191 F.3d 409, 418 (4th Cir. 1999). Instead, "[s]uch considerations are appropriately addressed not in determining what constitutes a facility in the case, but rather in

determining ... whether the harm is divisible." *Id.* at 419.

There are good reasons to give the EPA broad discretion in its designation of the "facility" that provides the basic organizational unit for initiating a cleanup. But there is no evidence that Congress intended for that rough initial designation to be the tail that wags the dog of ultimate financial responsibility under CERCLA. Congress does not "hide elephants in mouseholes," or "alter the fundamental details of a regulatory scheme in ... ancillary provisions." *Whitman v. Am. Trucking Ass'ns*, 531 U.S. 457, 468 (2001). If Congress had intended for the definition of the "facility" to be the primary crucial event in every CERCLA case, it would have provided standards and safeguards to guide and constrain those designations. Absent such standards, the statute must permit reasonable apportionment of liability. Otherwise a landowner whose lessee happens to spill small, undocumented amounts of hazardous substances, confined entirely to the lessor's own small parcel of land, could find himself jointly and severally liable for all of the cleanup expenses across an area the size of a large city—simply because the EPA chose to describe the "facility" in a manner that sweeps up thousands of unrelated landowners. *See, e.g., Eagle-Picher Indus., Inc. v. EPA*, 822 F.2d 132, 144 n.59 (D.C. Cir. 1987) (approving EPA expansion of site *from 15 to 115 square miles* after comment period).

The Ninth Circuit's hostility toward apportionment also threatens to dissolve any logical linkage between the *extent* of a defendant's liability under CERCLA and the *reasons* that the statute makes him liable. A passive landowner is liable under the statute because

he owns a parcel of land, but if geographic apportionment is disfavored the *amount* of his liability will ultimately be unrelated to what was disposed of on that land—and will depend instead on whether the EPA chooses to treat that parcel by itself, or lump it together as a "facility" with a large number of nearby properties. An "arranger" is liable for arranging for the disposal of hazardous materials, but if volumetric apportionment is disfavored the extent of his liability will have little or nothing to do with what he "arranged"—and will depend instead on how the EPA defines the metes and bounds of the "facility" at which the disposal occurred.

Such absurdities make a mockery of any coherent justification for strict liability, and suggest that Congress should instead have imposed CERCLA liability *pro rata* by net worth on the nation's wealthiest landowners and companies. An apportionment jurisprudence is therefore essential not only to avoiding unfairness to individual PRPs, but also to making sense of the statutory categories that Congress enacted. It frequently "'frustrates rather than effectuates legislative intent simplistically to assume that *whatever* furthers the statute's [primary] objective must be the law.'" *Sorrell*, 127 S. Ct. at 808 (quoting *Rodriguez v. United States*, 480 U.S. 522, 526 (1987) (per curiam)).

Liability that robustly disregards not just fault but also *causation* principles may actually increase pollution and response costs. If liability is unrelated to the amount of contamination for which a PRP is causally responsible (and which it could have prevented), the PRP has little incentive to pay for precautions that will not correspondingly diminish

liability. If anything, such expenditures put a PRP at a disadvantage compared to sloppier competitors that enjoy reduced operational costs but face similar liability risks. Thus, the rational strategy for a firm that may unavoidably emit even trace amounts of contaminants will be to "save by reducing precaution costs" and hope to not be among those found liable. Richard A. Epstein, *Two Fallacies in the Law of Joint Torts*, 73 Geo. L.J. 1377, 1386 (1985). The only way to avoid such perverse incentives in a strict liability regime is "by not treating the polluters as joint tortfeasors." William M. Landes & Richard A. Posner, *Joint & Multiple Tortfeasors: An Economic Analysis*, 9 J. Legal Stud. 517, 543 (1980).

B. The Ninth Circuit's Concern For The Public Fisc Does Not Justify Disregarding Common-Law Principles Of Apportionment

A central theme in the Ninth Circuit's "super strict" reading of CERCLA is fear that reasonable apportionment would leave the government, rather than other PRPs, paying for orphan shares of cleanups. In the Ninth Circuit's view, imposing joint and several liability on those with an admittedly "minor connection" promotes CERCLA's purpose of "distribut[ing] economic burdens .... as far as possible [to] *some* entity with connection to contamination," rather than the government. Pet.App-43a. The Ninth Circuit did not purport to find this principle in the common law, but drew it solely from the court's own view of the public policies underlying CERCLA.

A "polluter pays" principle is undeniably one of the policies underlying CERCLA, but it is not absolute—

and the Ninth Circuit's hostility to apportionment pushes that notion beyond all rational limits. If Congress had been solely concerned with ensuring that the government was never forced to absorb orphan shares, then it would have mandated joint and several liability. Congress's *rejection* of that choice necessarily represented a decision that orphan shares should be borne by the government in at least some cases. Congress also established the Superfund to pay for cleanup costs that cannot be collected from PRPs. *See* 42 U.S.C. §9611; S. Rep. No. 96-848, at 13 (1980) (fund created to "finance response actions where a liable party does not clean up, cannot be found, or cannot pay the costs of cleanup and compensation"). Until 1995, that account was primarily funded by levies on crude oil and chemicals, as well as an environmental tax on corporations. After Congress allowed that taxing authority to lapse, the Superfund has been increasingly funded by general appropriations and fines.[12] Congress has decided that when cleanup expenses cannot be assigned to a truly responsible party they should be shared by industry or the public generally. It is not the Ninth Circuit's place to bend common-law principles in the service of a different conception of public policy.

This Court has consistently refused to assume that CERCLA abrogated common-law principles, even when doing so would maximize the Government's

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12 *See* Letter from John B. Stephenson, Director of Natural Resources & Environment, Government Accounting Office, to Sen. James M. Jeffords (Feb. 18, 2004), *available at* http://www.gao.gov/new.items/d04475r.pdf (last visited Nov. 16, 2008).

ability to recover from PRPs. In *Bestfoods*, the government sought to hold a parent company "that actively participated in, and exercised control over, the operations of a subsidiary" liable for contamination caused by that subsidiary. 524 U.S. at 55. Rather than looking to the broader purposes of CERCLA, this Court defined the scope of the parent corporation's liability in light of common-law principles and held that a parent could not be derivatively liable for the acts of its subsidiaries unless "the corporate veil may be pierced." *Id.* at 62-63. This Court held that "'in order to abrogate a common-law principle, [CERCLA] must speak directly to the question addressed by the common law,'" that "nothing in CERCLA purports to reject [the] bedrock principle" respecting the legal distinctiveness of a subsidiary, and that "against this venerable common-law backdrop, the congressional silence is audible." *Id.* (citation omitted).

Similarly, CERCLA's remedial purposes did not move this Court to discard the default "American" rule that attorneys' fees are not recoverable absent explicit authorization. *See Key Tronic Corp. v. United States*, 511 U.S. 809 (1994). Because CERCLA did not "expressly mention[]" or "otherwise evince an intent to provide" fees spent on recovery litigation, this Court held that they were generally not recoverable as response costs under §107. *Id.* at 815, 819. *Key Tronic* followed the American rule even though "'awarding [such] fees'" would have promoted CERCLA's broader purpose of "'encourag[ing] private parties to assume the financial responsibility of cleanup.'" *Id.* at 819 n.13 (citation omitted).

In *Exxon Corp. v. Hunt*, 475 U.S. 355 (1986), a state defending its toxic "spill tax" argued that CERCLA's

cleanup goals counseled for a narrow construction of CERCLA's preemptive scope. *Id.* at 371. In finding the tax preempted, *Hunt* emphasized that CERCLA's preemption provision "resulted in part from Congress' concern about the potentially adverse effects of overtaxation" of polluters. *Id.* at 372. Here, as in *Hunt*, "remedying the Nation's toxic waste problems as effectively as possible was not the sole policy choice reflected in CERCLA," *id.*, and courts should not disturb the balance Congress struck in adopting common-law principles of apportionment and causation.[13]

The only possible common-law basis for the Ninth Circuit's policymaking is comment h to Second Restatement §433A, which suggests that considerations of "injustice" could permit courts to impose joint and several liability if some responsible parties are unavailable or insolvent. The district court considered comment h and found it inapplicable here. Pet.App.-243a-45a The Ninth Circuit did not review this conclusion, but courts firmly reject comment h in the CERCLA context. *See, e.g., Bell Petroleum*, 3 F.3d at 901 n.13; *Hercules*, 247 F.3d at 718 n.10. The

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13 When this Court fashions common-law rules more generally, it rejects those that would saddle parties with unforeseeable liability. In crafting common-law restrictions on punitive damages, the Court identified "the stark unpredictability of punitive awards" as the primary evil it sought to avoid. *Exxon Shipping Co. v. Baker*, 128 S. Ct. 2605, 2625 (2008). Raising the apportionment bar—and thus holding landowners liable for pollution *completely* unrelated to their ownership—similarly prevents potential PRPs from structuring their conduct to avoid capricious liability.

retroactive strict liability imposed by CERCLA is often remarkably "unjust" in common-law terms, and there certainly is no justification for importing broader equitable considerations into the apportionment analysis *only* when they favor plaintiffs. Liberal application of comment h in cases involving insolvent defendants would also completely undo Congress's decision not to mandate joint and several liability—by imposing joint and several liability in every situation where it matters. Regardless, the district court certainly did not abuse its discretion in declining to impose joint and several liability under comment h here, and no further proceedings on this question are necessary.

The Ninth Circuit's suggestion that it is always better for a private party with "some connection" to the pollution to pay for cleanup, rather than the taxpayers, is also nonsensical public policy. Society as a whole is a better insurer against the risks of insolvency than a marginal PRP. *See* Jerry L. Anderson, *The Hazardous Waste Land*, 13 Va. Envtl. L.J. 1, 34-35 (1993) (citing Guido Calabresi, *The Costs of Accidents* 40 (1970), and Guido Calabresi, *Some Thoughts on Risk Distribution and the Law of Torts*, 70 Yale L.J. 499, 519-24 (1961)). And if the purpose of CERCLA is shifting the costs of cleanup to "'parties who benefited from the disposal of the wastes,'" Pet.App.-17a (citations omitted), *society*—which enjoys the lower product costs that accompany environmental laxity, *id.* at 35—is a far more plausible candidate than a landowner with the misfortune of being near a toxic

waste site.[14] As one commenter observed, in multiple-PRP cases, "what appears on the surface to be a fair distribution of the cleanup costs deteriorates rapidly into a liability lottery, in which a few randomly-selected parties, many of whom have little or even no connection to the waste disposal activity, bear the entire cost of cleanup." Anderson, *supra*, 13 Va. Envtl. L.J. at 9. PRPs are pulled into the liability pool by dint of a waste truck driver's foggy, decades-old recollection, *id.* at 12-14, by the government's practice of searching out deep-pocketed parties, *id.* at 40, or (as explained above) simply by the EPA's decision to define a "facility" that might encompass a hundred square miles.

C. The Ninth Circuit's Interpretation Exacerbates Doubts About CERCLA's Constitutionality

CERCLA imposes far-reaching and unprecedented retroactive liability. Current defendants who are entirely innocent in terms of traditional fault are held liable for the conduct of others, sometimes as far back as a century ago, that in many cases would not even have been understood to be wrongful by the participants at the time. This Court enjoined

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[14] The "innocent landowner" defense only applies to those who acquired land *after* any disposal. 42 U.S.C. §9601(35)(A). Even if such an innocent purchaser can *prove* that the disposal occurred before his acquisition, he must also show that he had no reason to know of any disposal at the time of acquisition, and that he made all "appropriate inquiries" at the time of purchase. *Id.* §9601(35)(B). Courts have "held [such] parties to rigid standards in proving their purchase was innocent." 1 Allan J. Topol & Rebecca Snow, *Superfund Law & Procedure* §5:21, at 574 (2007).

application of the Coal Act in *Eastern Enterprises v. Apfel*, 524 U.S. 498 (1998), because it imposed retroactive liability for the health care costs of former coal miners and their families on coal industry participants, under circumstances where the companies had made no promises and were not genuinely *responsible* for the harms they were being forced to shoulder. CERCLA strains the basic due process and takings principles articulated in cases like *Eastern Enterprises* close to the breaking point, even if liability is rationally apportioned among responsible parties.

The Railroads respectfully submit that interpreting CERCLA to impose joint and several liability in all but extraordinary cases, as the Ninth Circuit's reasoning here would dictate, would raise "a multitude of constitutional problems." *Clark v. Martinez*, 543 U.S. 371, 380-81 (2005). Absent reasonable apportionment here, for example, CERCLA would hold the Railroads retroactively liable for the cleanup of nearly fifty-year-old contamination on the B&B parcel—contamination for which the Railroads had no fault or responsibility under governing law at the time, and that the Railroads had absolutely no power to prevent. The Ninth Circuit would excuse the Railroads from such retroactive liability only if they can produce records that only *B&B* could have kept, about activities on B&B's own land fifteen years before it began leasing the Railroad parcel, and that the court of appeals admitted would have been of "little utility to B&B" and unlikely to be "available for periods long in the past." Pet.App.-41a. The companies in *Eastern Enterprises* at least once *employed* the coal workers to whom they were ordered to pay unexpected benefits, *cf.* 524 U.S. at 560 (Breyer, J., dissenting); impressing a party to

pay after the fact for a problem it did not cause and could not have prevented is "far outside the bounds of retroactivity permissible under" the Constitution, *id.* at 550 (Kennedy, J., concurring in the judgment and dissenting).

There is no reason for this Court to adopt an interpretation of CERCLA that would create serious constitutional doubts in a great many cases, including this one, when common-law principles provide a ready framework for confining the statute within sensible bounds.

CONCLUSION

The decision of the Ninth Circuit should be reversed, and the district court's judgment should be affirmed. There is no need for a remand.

Respectfully submitted,

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NOVEMBER 17, 2008

ADDENDUM

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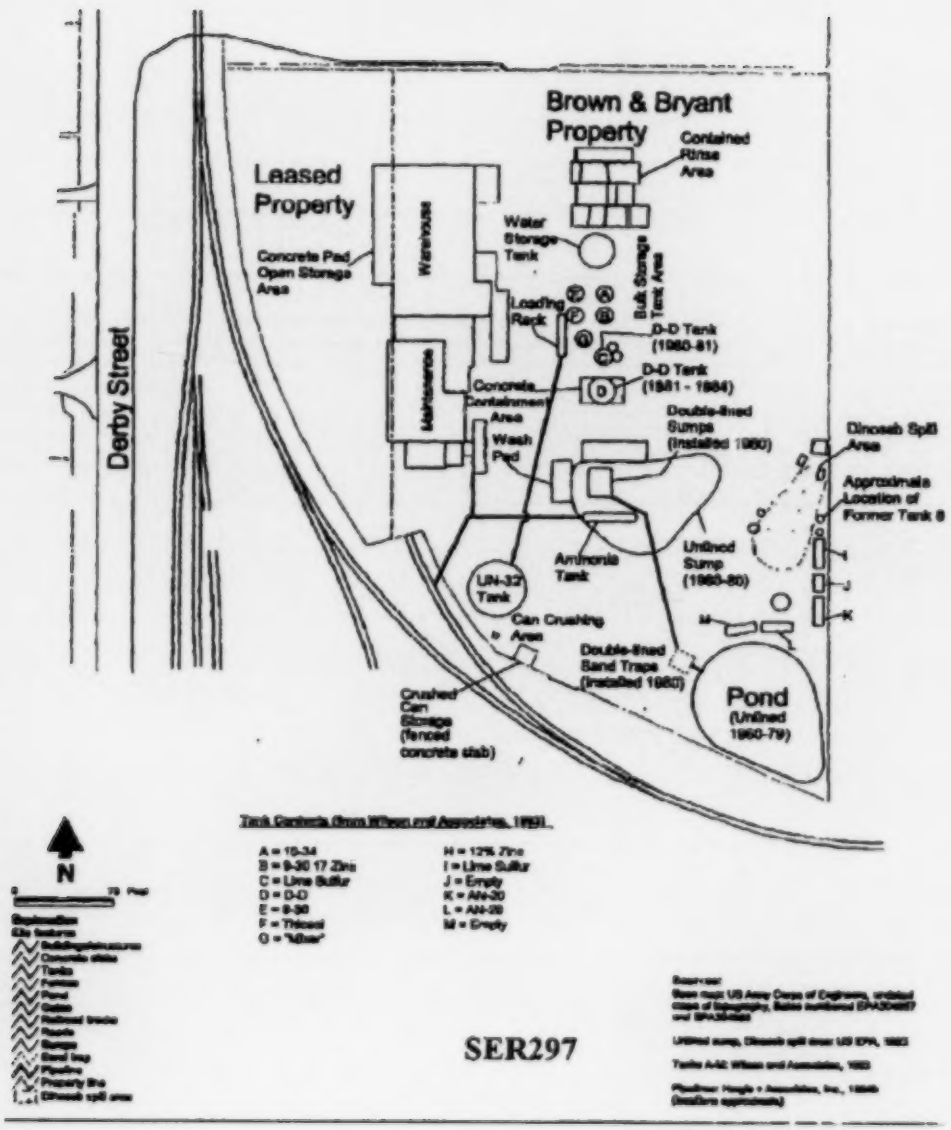
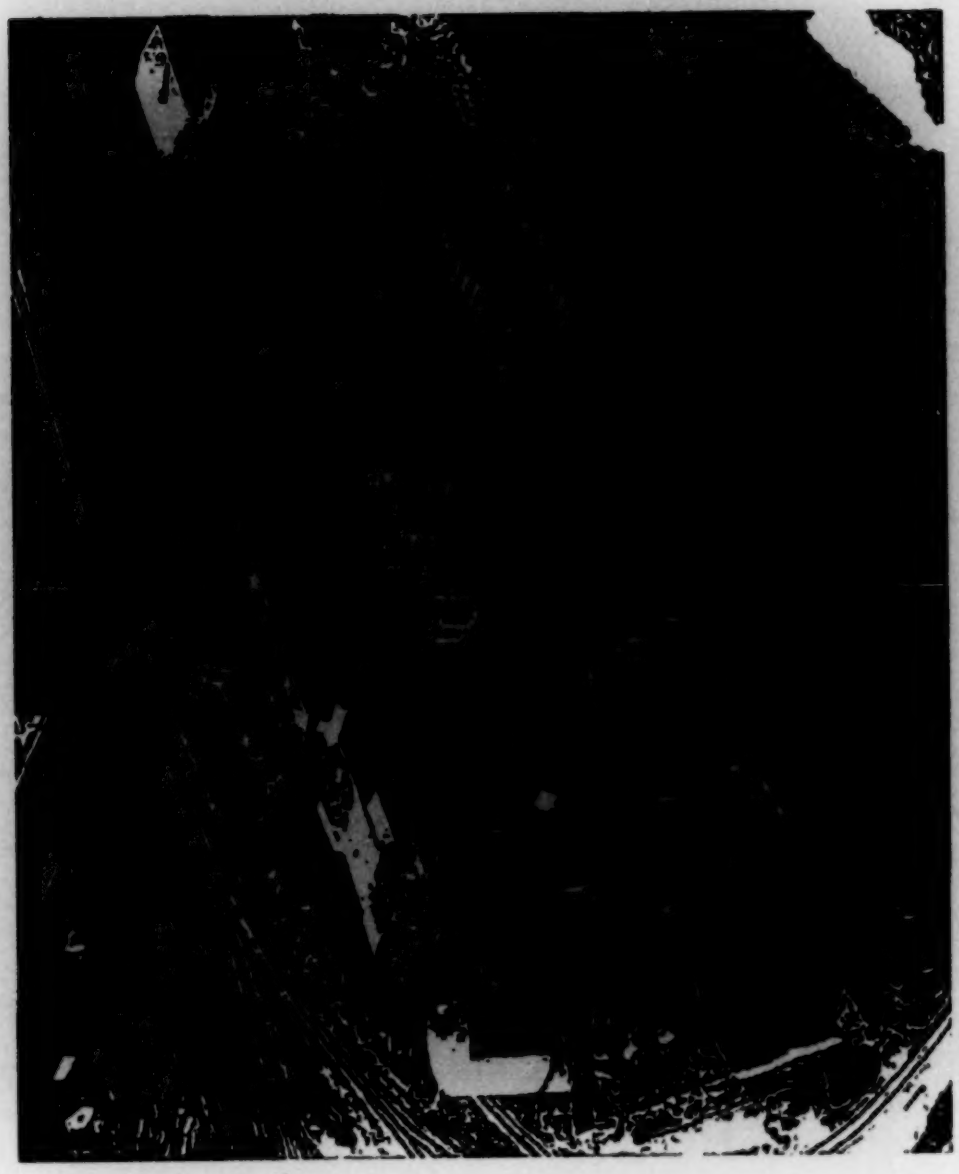
[Site Map]


Brown & Bryant Property
Leased Property
Contained Rinse Area
Water Storage Tank
Concrete Pad Open Storage Area
Warehouse
Bulk Storage Tank Area
Loading Rack
D-D Tank (1980-81)
D-D Tank (1981 - 1984)
Maintenance
Concrete Containment Area
Wash Pad
Double-lined Sumps (Installed 1980)
Dinoseb Spill Area
Approximate Location of Former Tank 8
Derby Street
Unlined Sump (1960-80)
Ammonia Tank
UN-32 Tank
Can Crushing Area
Double-lined Sand Traps (Installed 1980)
Pond (Unlined 1960-79)
Crushed Can Storage (fenced concrete slab)
N
A = 15-34
B = 9-30 17 Zinc
C = Lime Sulfur
D = D-D
E = 8-56
F = Thiosol
G = "Other"
H = 12% Zinc
I = Lime Sulfur
J = Empty
K = AN-20
L = AN-26
M = Empty
SER297

[Trial Exhibit 392 –
Aerial Photo]



TITLE 42. THE PUBLIC HEALTH AND WELFARE

CHAPTER 103. COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY

SUBCHAPTER I. HAZARDOUS SUBSTANCES RELEASES, LIABILITY, COMPENSATION

42 U.S.C. § 9601

§ 9601. Definitions

For purpose of this subchapter—

* * *

(9) The term "facility" means (A) any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft, or (B) any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located; but does not include any consumer product in consumer use or any vessel.

* * *

(11) The term "Fund" or "Trust Fund" means the Hazardous Substance Superfund established by section 9507 of title 26.

(12) The term "ground water" means water in a saturated zone or stratum beneath the surface of land or water.

* * *

(14) The term "hazardous substance" means (A) any substance designated pursuant to section 1321(b)(2)(A) of title 33, (B) any element, compound, mixture, solution, or substance designated pursuant to section 9602 of this title, (C) any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act [42 U.S.C. 6921] (but not including any waste the regulation of which under the Solid Waste Disposal Act [42 U.S.C. 6901 et seq.] has been suspended by Act of Congress), (D) any toxic pollutant listed under section 1317(a) of title 33, (E) any hazardous air pollutant listed under section 112 of the Clean Air Act [42 U.S.C. 7412], and (F) any imminently hazardous chemical substance or mixture with respect to which the Administrator has taken action pursuant to section 2606 of title 15. The term does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance under subparagraphs (A) through (F) of this paragraph, and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).

* * *

(20)(A) The term "owner or operator" means (i) in the case of a vessel, any person owning, operating, or chartering by demise, such vessel, (ii) in the case of an onshore facility or an offshore facility, any person

owning or operating such facility, and (iii) in the case of any facility, title or control of which was conveyed due to bankruptcy, foreclosure, tax delinquency, abandonment, or similar means to a unit of State or local government, any person who owned, operated, or otherwise controlled activities at such facility immediately beforehand. Such term does not include a person, who, without participating in the management of a vessel or facility, holds indicia of ownership primarily to protect his security interest in the vessel or facility.

* * *

(32) The terms "liable" or "liability" under this subchapter shall be construed to be the standard of liability which obtains under section 1321 of title 33.

* * *

42 U.S.C. § 9607

§ 9607. Liability

(a) Covered persons; scope; recoverable costs and damages; interest rate; "comparable maturity" date.

Notwithstanding any other provision or rule of law, and subject only to the defenses set forth in subsection (b) of this section—

(1) the owner and operator of a vessel or a facility,

(2) any person who at the time of disposal of any hazardous substance owned or operated any facility at which such hazardous substances were disposed of,

(3) any person who by contract, agreement, or otherwise arranged for disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous substances owned or possessed by such person, by any other party or entity, at any facility or incineration vessel owned or operated by another party or entity and containing such hazardous substances, and

(4) any person who accepts or accepted any hazardous substances for transport to disposal or treatment facilities, incineration vessels or sites selected by such person, from which there is a release, or a threatened release which causes the incurrence of response costs, of a hazardous substance, shall be liable for—

(A) all costs of removal or remedial action incurred by the United States Government or a State or an Indian tribe not inconsistent with the national contingency plan;

(B) any other necessary costs of response incurred by any other person consistent with the national contingency plan;

(C) damages for injury to, destruction of, or loss of natural resources, including the reasonable costs of assessing such injury, destruction, or loss resulting from such a release; and

(D) the costs of any health assessment or health effects study carried out under section 9604(i) of this title.

* * *

RESPONDENT'S BRIEF

Nos. 07-1601 and 07-1607

In the Supreme Court of the United States

BURLINGTON NORTHERN AND SANTA FE RAILWAY COMPANY, ET AL., PETITIONERS

v.

UNITED STATES OF AMERICA, ET AL.

SHELL OIL COMPANY, PETITIONER

v.

UNITED STATES OF AMERICA, ET AL.

ON WRITS OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

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QUESTIONS PRESENTED

1. Whether the court of appeals correctly affirmed the district court's determination that petitioner Shell Oil Company is liable under Section 107(a)(3), 42 U.S.C. 9607(a)(3), of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C. 9601 *et seq.*, as an entity that "arranged for disposal" of hazardous substances.

2. Whether the court of appeals properly held petitioners jointly and severally liable under CERCLA for the response costs of the United States and California governments, based on the court's conclusion that petitioners did not satisfy their evidentiary burden of providing a reasonable basis to apportion liability.

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In the Supreme Court of the United States

No. 07-1601

BURLINGTON NORTHERN AND SANTA FE RAILWAY COMPANY, ET AL., PETITIONERS

v.

UNITED STATES OF AMERICA, ET AL.

No. 07-1607

SHELL OIL COMPANY, PETITIONER

v.

UNITED STATES OF AMERICA, ET AL.

ON WRITS OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

BRIEF FOR THE UNITED STATES

STATEMENT

This case arises from actions taken by the United States and the State of California to address hazardous-substance contamination at a former agricultural chemical storage and distribution facility located in Arvin, California. The United States and the State brought a cost-recovery action against petitioners, two railroad companies (the Railroads) and a chemical manufacturer (Shell), under CERCLA Section 107(a), 42 U.S.C.

9607(a), which authorizes federal and state governments to recover their response costs from persons who have a statutorily specified nexus to the contamination. After a bench trial, the district court found the Railroads and Shell to be liable parties under CERCLA, and further found that the Railroads and Shell were liable for 9% and 6% of the response costs, respectively. Pet. App. 82a-262a. The court of appeals affirmed in part and reversed in part, holding that Shell was a liable party and that petitioners were jointly and severally liable for the full costs of the cleanup activities undertaken by the United States and California. *Id.* at 1a-57a.

1. Congress enacted CERCLA "in response to the serious environmental and health risks posed by industrial pollution." *United States* v. *Bestfoods*, 524 U.S. 51, 55 (1998). CERCLA "both provides a mechanism for cleaning up hazardous-waste sites, and imposes the costs of the cleanup on those responsible for the contamination." *Pennsylvania* v. *Union Gas Co.*, 491 U.S. 1, 7 (1989) (citation omitted).

The Environmental Protection Agency (EPA) is authorized to clean up a contaminated site, drawing from the federal government's Superfund, and then to sue to recover its cleanup costs. 42 U.S.C. 9604(a), 9607(a)(4)(A). To establish a prima facie case, the United States must show that a "release" or "threatened release" of a "hazardous substance" from a "facility" has caused the United States to incur cleanup costs. 42 U.S.C. 9607(a). The United States must further establish that the defendant falls within at least one of four classes of covered persons: (1) the owner and operator of the facility, (2) the owner or operator of the facility at the time that disposal of hazardous substances occurred, (3) persons who "arranged for disposal" or treatment of

hazardous substances, and (4) certain transporters of hazardous substances. 42 U.S.C. 9607(a)(1)-(4).

Subject to limited defenses not implicated in these cases, any person within the categories described above is liable to the government for "all costs of removal or remedial action incurred" by the United States "not inconsistent with the national contingency plan." 42 U.S.C. 9607(a)(4)(A) and (b); 40 C.F.R. Pt. 300. Under the apportionment rules developed by lower federal courts pursuant to pre-existing common-law principles, a covered party is jointly and severally liable to the government for the entire amount of response costs unless it proves that the harm from the release of hazardous substances is divisible.[1] That rule furthers Congress's purpose of ensuring that the costs of remediation are borne by those with a defined nexus to the contamination, rather than by the general public. See *Bestfoods*, 524 U.S. at 56 n.1 ("The remedy that Congress felt it needed in CERCLA is sweeping: *everyone* who is potentially responsible for hazardous-waste contamination may be forced to contribute to the costs of cleanup.") (quoting *Union Gas Co.*, 491 U.S. at 21 (plurality opinion of Brennan, J.)); S. Rep. No. 848, 96th Cong., 2d Sess. 13 (1980) (stating Congress's "goal of assuring that those who caused chemical harm bear the cost of that harm").

In analyzing divisibility of harm in Section 107(a)(4)(A) actions, courts follow the Restatement (Sec-

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[1] See, *e.g.*, *Centerior Serv. Co.* v. *Acme Scrap Iron & Metal Corp.*, 153 F.3d 344, 348 (6th Cir. 1998); *United States* v. *Alcan Aluminum Corp.*, 990 F.2d 711, 721-722 (2d Cir. 1993); *United States* v. *Alcan Aluminum Corp.*, 964 F.2d 252, 268-269 (3d Cir. 1992); *United States* v. *Aceto Agric. Chems. Corp.*, 872 F.2d 1373, 1377 (8th Cir. 1989); *United States* v. *Monsanto Co.*, 858 F.2d 160, 167, 171-172 (4th Cir. 1988), cert. denied, 490 U.S. 1106 (1989).

ond) of Torts (1965) (Restatement). See, *e.g.*, *United States* v. *Hercules, Inc.*, 247 F.3d 706, 717 (8th Cir. 2001) (recognizing Restatement as the "universal starting point"), cert. denied, 534 U.S. 1065 (2001); *United States* v. *Chem-Dyne Corp.*, 572 F. Supp. 802, 810 (S.D. Ohio 1983) (establishing framework). Restatement § 433A provides that damages may be apportioned where there are distinct harms or where there is a "reasonable basis for determining the contribution of each cause to a single harm." The party seeking apportionment has the burden of proof. See Restatement § 433B(2); see also, *e.g.*, *Chem-Dyne*, 572 F. Supp. at 810. Where a liable party cannot meet its burden, it is jointly and severally liable "for the full amount of the harm." *Chem-Nuclear Sys., Inc.* v. *Bush*, 292 F.3d 254, 260 (D.C. Cir. 2002).

A party held jointly and severally liable may file a separate contribution action pursuant to CERCLA Section 113(f)(1) against other liable or potentially liable parties. 42 U.S.C. 9613(f)(1). Section 113(f), added six years after CERCLA's enactment, reflects Congress's compromise response to the potentially disproportionate burden placed on certain covered parties by CERCLA's liability provisions. Section 113(f)(1) provides that "[i]n resolving contribution claims, the court may allocate response costs among liable parties using such equitable factors as the court determines are appropriate." *Ibid.*[2]

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[2] Congress has also amended CERCLA in other ways to limit the breadth of CERCLA liability. In January 2002, for example, Congress enacted an exemption from liability at National Priority List (NPL) sites for those persons who sent less than 110 gallons of liquid materials or less than 200 pounds of solid materials to the site (§ 107(*o*)); an exemption for certain categories of persons from liability at NPL sites for disposing of municipal solid waste (§ 107(p)); a defense to liability for certain owners of property located contiguous to, and contaminated by,

2. In 1960, Brown & Bryant, Inc. (B&B) began to operate an agricultural chemical distribution business on a 3.8-acre parcel of land (the B&B parcel). Pet. App. 12a. In 1975, B&B expanded its operations by leasing a 0.9-acre parcel owned by the Railroads (the Railroad parcel) that adjoined the B&B parcel to the west. *Ibid.* B&B used the Railroad parcel as an "integral part" of its agricultural chemical operations and treated the two parcels as a single facility. *Id.* at 86a. The Railroad parcel was graded toward a pond on the B&B parcel. *Id.* at 12a. B&B ceased operating the facility in 1989 and is now insolvent. *Id.* at 83a-84a.

Among the Shell-manufactured products stored and distributed at B&B's facility were two pesticides, D-D and Nemagon. Pet. App. 13a. B&B also stored dinoseb, a weed killer, supplied by another company. *Ibid.* Chemical constituents of all three products have been banned by EPA or withdrawn from use as pesticides due to threats to human health and the environment. Gov't C.A. E.R. 69-70. EPA has also listed the relevant constituents to be hazardous substances for CERCLA purposes. Pet. App. 174a.

During their transfer and storage, the chemicals routinely spilled and leaked onto both parcels. Pet. App. 13a-14a, 130a. Over the course of the facility's operation, hazardous substances entered the subsurface, cre-

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hazardous waste sites (§ 107(q)); and a defense to liability for bona fide prospective purchasers of contaminated property (§ 107(r)). 42 U.S.C. 9607(*o*)-(r) (Supp. V 2005). In addition, those who do not qualify for Section 107(*o*)'s exemption, but who sent a relatively small amount of hazardous substances to a site, may enter into a de minimis settlement, under which they make a limited cash payment to EPA in exchange for an immediate release from past and future liability at the site. 42 U.S.C. 9622(g) (2000 & Supp. V 2005).

ating areas of contaminated soil and, of particular concern, a plume of contaminated groundwater that threatens municipal drinking water supplies. *Id.* at 14a, 172a-174a, 245a-246a. After investigations, the United States and the State began to clean up the contamination at the facility pursuant to their response authority under CERCLA. *Id.* at 14a-15a.

3. In 1996, the United States and the State filed suit under CERCLA Section 107(a) to recover their response costs, naming as defendants B&B, the Railroads, and Shell. In 2003, after a bench trial, the district court issued its Amended Findings of Fact and Conclusions of Law. Pet. App. 82a-262a.

a. The district court held that the United States and the State had established a prima facie case of CERCLA liability. Pet. App. 163a-219a. The court determined that the entire site, encompassing both the B&B and Railroad parcels, constitutes a single "facility." *Id.* at 172a-173a. The court found that site operations released hazardous substances "from and located throughout the facility, particularly in the form of contaminated groundwater," and that the plume "poses an indivisible threat of leaching and diffusing contaminants to lower groundwater suitable for drinking." *Id.* at 172a. The court further found that the soil and groundwater at the facility are contaminated with, among other hazardous substances, the constituents of the two Shell products as well as dinoseb. *Id.* at 88a, 174a.

The district court found that the Railroads were responsible parties under CERCLA Section 107(a)(1)-(2), 42 U.S.C. 9607(a)(1)-(2), as owners of the facility and as owners of the facility at the time of disposal. Pet. App. 176a-179a, 186a-187a. The court rejected the Railroads' proffered defense under CERCLA Section 107(b)(3), 42

U.S.C. 9607(b)(3), under which a defendant must show that "the release or threatened release was caused solely by an unrelated third party." Pet. App. 180; see *id.* at 184a-187a. The court explained that "[a] 'contractual relationship' between the Railroads and B&B existed," that the Railroads "periodically inspected B&B's plant and had actual knowledge" of B&B's operations, and that "B&B used the leased parcel to store chemicals where leaks would often occur." *Id.* at 184a-185a; see *id.* at 176a, 178a-179a. The court further determined that the Railroads had "submitted no evidence that they took any action to prevent or mitigate their lessee's conduct on the Site, which ignored the hazards of continuous spills, releases and reckless practices in the unloading, storage, formulating and loading of toxic ag-chemicals." *Id.* at 185a. The court found that the Railroads had "failed to show that they acted with due care" or "took any precautionary actions against the foreseeable results of B&B's activities in storing and handling hazardous ag chemicals on the Railroad parcel." *Ibid.*

The district court also held that Shell was liable pursuant to CERCLA Section 107(a)(3), 42 U.S.C. 9607(a)(3), as a party who had "arranged for disposal" of hazardous substances. Pet. App. 204a, 208a-213a. The court found that Shell had "determined and arranged for the means and methods of delivery of the D-D to the Arvin plant"; that Shell had "hired common carrier delivery trucks to haul D-D to B&B's Arvin plant"; that B&B was required to follow the Shell manual which provided "detailed loading and unloading procedures"; and that over one period Shell had "required B&B to store highly corrosive D-D in bulk tanks, at a time when the distributors did not have the equipment or capital to deal with the corrosive D-D." *Id.* at 208a-209a. The

court further found that Shell "was an active participant in the D-D shipment, delivery and receiving process at Arvin with knowledge that spills and leaks of hazardous D-D were inherent and inevitable," and that such spills and leaks "occurred throughout the period Shell sold D-D to B&B." *Id.* at 204a.

b. The district court then addressed whether the Railroads and Shell should be held jointly and severally liable for the response costs incurred by the United States and the State.

The district court found that the harm at the site "is a single harm which consists of contaminated soil at various locations and depths around the Site and one mass (plume) of contaminated groundwater." Pet. App. 245a-246a. The court also explained that the Railroads and Shell had presented no evidence or argument to demonstrate a reasonable basis for apportioning that harm:

> Apportionment in this case is exacerbated by defendants' "scorched earth," all-or-nothing approach to liability. Neither acknowledged an iota of responsibility, in the case of Shell, for causing "releases of hazardous substances,["] and in the case of the Railroads, that any release of hazardous substance that required response occurred on [the] Railroad parcel throughout the 13 year lease terms.

Id. at 236a. The court further found that "no party has specifically documented the relative contributions of contamination from either parcel," *id.* at 248a, and that there is "no evidence to quantify the difference in volume of the releases" from the Railroad and B&B parcels, *id.* at 252a.

The district court summarized the situation before it by stating that "[a]ll parties" to the suits had "effec-

tively abdicated providing any helpful arguments to the court." Pet. App. 236a-237a. In the court's view, that dearth of assistance from the parties had "left the court to independently perform the equitable apportionment analysis demanded by the circumstances of the case." *Id.* at 237a. In determining the percentage of the total response costs for which the Railroads would be held liable, the district court calculated the surface area of the Railroad parcel to be 19.1% of the total site surface area and the 13-year duration of the B&B-Railroad lease to be 45% of the site's total 29 years of operation. *Id.* at 247a. The court assumed that none of the D-D contamination originated from the Railroad parcel and that Nemagon and dinoseb "contributed to 2/3 of overall Site contamination." *Id.* at 251a. The court then multiplied the three percentages and arrived at 6%. *Id.* at 252a. The court adjusted the Railroads' liability, "[a]llowing for calculation errors up to 50%," to 9% of the total response costs. *Ibid.*

The district court acknowledged that "Shell did not present evidence how its products' contribution to the contamination at the Arvin facility can be apportioned." Pet. App. 252a. The court nonetheless estimated the amount of D-D spilled during "Shell controlled" deliveries and then the amount of D-D spilled for all other activities. *Id.* at 256a. Dividing the estimated volume spilled during Shell-controlled deliveries by the total estimated volume of D-D spills, the court held Shell severally liable for 6% of the response costs. *Id.* at 256a-257a.

4. The court of appeals affirmed in part and reversed in part. Pet. App. 1a-81a.

a. The court of appeals affirmed the district court's ruling that Shell is a liable party under CERCLA as one

who "arranged for disposal" of hazardous substances. Pet. App. 44a-55a. The court observed that "arranger" liability extends not only to direct arrangements for disposal of hazardous substances, but also to arrangements in which such disposal is a foreseeable byproduct (though not the purpose) of the transaction. *Id.* at 48a-50a. The court noted that CERCLA's definition of "disposal" includes the unintentional processes of "spilling" and "leaking." *Id.* at 50a-51a. The court inferred from that definition that "an entity can be an arranger even if it did not intend to dispose of the product. Arranging for a transaction in which there necessarily would be leakage or some other form of disposal of hazardous substances is sufficient." *Id.* at 51a.

The court of appeals then recounted the evidence supporting "arranger" liability here:

> (1) Spills occurred *every time* the deliveries were made; (2) Shell arranged for delivery and chose the common carrier that transported its product to the Arvin site; (3) Shell changed its delivery process so as to require the use of large storage tanks, thus necessitating the transfer of large quantities of chemicals and causing leakage from corrosion of the large steel tanks; (4) Shell provided a rebate for improvements in B & B's bulk handling and safety facilities and required an inspection by a qualified engineer; (5) Shell regularly would reduce the purchase price of the D-D, in an amount the district court concluded was linked to loss from leakage; and (6) Shell distributed a manual and created a checklist of the manual requirements, to ensure that D-D tanks were being operated in accordance with Shell's safety instructions.

Pet. App. 53a-54a. The court held that the district court's findings "demonstrate that Shell had sufficient control over, and knowledge of, the transfer process to be considered an 'arranger,' within the meaning of CERCLA, for the disposal of the chemicals that leaked." *Id.* at 55a.

b. The court of appeals reversed the district court's apportionment of harm and held petitioners jointly and severally liable for the full costs of the response actions, except for a "Dinoseb hot spot" for which Shell was not liable. Pet. App. 19a-47a, 56a-57a.

After agreeing that the harm in this case was theoretically capable of apportionment, the court of appeals reviewed the district court's actual apportionment for clear error, using Restatement § 433A as its starting point. Pet. App. 22a, 36a-37a. With respect to the Railroads, it held that the district court's apportionment calculation (based solely on percentage of land area, duration of ownership, and the Railroads' responsibility for two of the three distinct contaminants at the site) lacked a reasonable basis in the record. *Id.* at 37a-44a. The court concluded that the numbers the district court had used "bore insufficient logical connection to the pertinent question: What part of the contaminants found on the Arvin parcel were attributable to the presence of toxic substances or to activities on the Railroad parcel?" *Id.* at 43a.

With respect to Shell, the court of appeals held that the evidence produced at trial was insufficient to formulate even a rough approximation of Shell's proportional share of the site contamination. Pet. App. 44a-45a. The court found that the leakage evidence in the record did not provide a reasonable basis to sustain the district court's analysis because the site was contaminated with

a number of chemicals, and because Shell had failed to introduce any evidence from which a court could identify the percentage of the soil contamination that was attributable to its leaked chemicals. *Ibid.* As the court explained, the record lacked that evidence "most likely because Shell put its eggs in the no-liability basket." *Id.* at 47a.

SUMMARY OF ARGUMENT

CERCLA's critical cost-recovery remedy is designed to place the costs of cleaning up contamination from hazardous substances on parties who have a demonstrated nexus to the contamination, rather than on the general public. Because Shell knew that its contract to supply B&B with agricultural chemicals directly and routinely resulted in spills and leaks that expressly qualify as disposals of hazardous substances covered by CERCLA, Shell is liable as an "arranger" of those disposals. And because neither Shell nor the Railroads established a reasonable evidentiary basis for apportioning the single harm at issue here, the court of appeals correctly held that those parties were jointly and severally liable for the response costs at issue.

I. A. Congress specified that a party may be liable under CERCLA if it "arrange[s] for" activities whose direct and anticipated consequence is the "disposal" of hazardous substances, even if that disposal is not the purpose of the transaction. Although CERCLA does not define the term "arrange for," it defines "disposal" to include the acts of spilling and leaking. That definition implies that arranger liability is not limited to transactions involving intentional disposals. That interpretation is consistent both with the common law (under which a party may be held liable for arranging a trans-

action that it knows will create a nuisance, see Restatement § 427B), and with CERCLA's purpose of placing the costs of remediation on those responsible for the disposal of hazardous substances.

As the courts below found, the record in this case amply demonstrates that Shell arranged for and was an active participant in the delivery of its agricultural chemicals to B&B. Those deliveries directly and routinely resulted in disposals of hazardous substances (through spills and leaks) for more than 20 years, and Shell had actual knowledge of that fact. Under those circumstances, both the district court and court of appeals correctly determined that Shell had "arranged for disposal" of hazardous substances, and relieving Shell of its obligation to pay for response costs would directly contravene CERCLA's objective of holding responsible parties—rather than the taxpaying public—acountable for their activities.

B. Shell's proffered bases for avoiding arranger liability lack merit. The fact that a transaction involves the delivery of a useful product does not preclude arranger liability where (as here) the arranger knows that disposal of a hazardous substance—through spills and leaks, or otherwise—will occur during the course of the transaction. Moreover, contrary to Shell's contention, Section 107(a)(3) imposes liability if a person "arranged for disposal * * * of hazardous *substances*," not just hazardous *waste*.

Shell is also wrong in arguing that Section 107(a)(3) limits arranger liability to circumstances in which the defendant retains ownership, possession, or actual control of its hazardous substances *at the time of disposal*. That provision broadly encompasses "any person who by contract, agreement, or otherwise" arranges for some

"other party or entity" to dispose of its hazardous substances. Although Section 107(a)(3) refers to "hazardous substances owned or possessed by" the arranger, that language refers to ownership or possession *at the time the arrangement is made*. Shell's contrary rule, under which an arranger could escape liability simply by transferring ownership and control of its hazardous substances to another party who agrees to carry out the actual disposal, would render Section 107(a)(3) ineffectual in the paradigmatic arranger case.

II. A. Consistent with Restatement principles, the courts of appeals uniformly have held that Section 107(a)(4)(A) liability for a single harm is joint and several *unless* the defendant establishes a reasonable basis for apportioning the harm. At the same time, however, lower courts have uniformly recognized that, after joint and several liability has been imposed, a defendant may invoke the separate CERCLA provision authorizing suits for contribution, under which the court may weigh equitable factors in allocating costs, to seek from other responsible parties the portion of costs paid beyond its fair share. See 42 U.S.C. 9613(f)(1). That settled framework is consistent with the common law and permits courts fairly to divide response costs among responsible parties.

B. Rather than attempt to establish an evidentiary basis for apportioning costs in this case, the Railroads and Shell made a strategic choice to pursue a "'scorched earth,' all-or-nothing approach to liability." Pet. App. 236a. Nevertheless, despite acknowledging that neither the Railroads nor Shell had provided any evidentiary basis for apportionment, the district court performed what it called "the equitable apportionment analysis demanded by the circumstances of this case." *Id.* at

237a. That was error. The district court conflated its task of apportionment under Section 107(a) with the court's role in a separate contribution action under Section 113(f)(1), which authorizes consideration of a broad range of equitable factors. As a result, the district court felt compelled to apportion the harm in this case—out of a sense of equity because the primary polluter was insolvent—notwithstanding the lack of a reasonable basis for apportionment. That approach was seriously flawed, both because it absolved petitioners of their burden of establishing a sound evidentiary basis for apportionment, and because under Restatement principles the insolvency of another responsible party weighs *against* rather than in favor of apportionment.

C. The district court's equitable apportionment relied on numerous unsubstantiated assumptions and gross approximations. First, there is no reasonable basis to assume that each petitioner's share of the ultimate harm is proportional to its volumetric contribution to the contamination. Each source of contamination may have been independently sufficient to have caused the harm requiring remediation, and the district court failed to account for the relative toxicities or costs of remediation of the different constituents—presumably because the record lacked that information. Second, there is no reasonable basis to assume that the Railroads' contribution to the contamination was proportional to their land area and duration of ownership. Geographic divisibility does not mean that a landowner is liable only for the percentage of the facility it owned. And temporal divisibility for landowners is inherently problematic (indeed, it can have the extreme consequence of negating landowner liability under Section 107(a)(1) altogether), especially where (as here) there is no reason to believe that the

degree of contamination remained constant over time. Third, there is no reasonable basis for the district court to have assumed that 2/3 of the total contamination was from dinoseb and Nemagon. Fourth, there is no reasonable basis for using estimates from anecdotes and incomplete records to determine the relative volume of Shell's spills, and the district court failed to account for various factors (*e.g.*, water, porosity, solubility) necessary to correlate those spill volumes with the actual contamination. The upshot is that the district court's apportionment analysis, on which petitioners rely, has no foundation in the record, or CERCLA.

ARGUMENT

I. SHELL IS LIABLE UNDER THE TERMS OF CERCLA BECAUSE IT "ARRANGED FOR DISPOSAL" OF A HAZARDOUS SUBSTANCE AND NOT MERELY FOR A SALE

CERCLA Section 107(a)(3) imposes liability on:

> any person who by contract, agreement, or otherwise arranged for disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous substances owned or possessed by such person, by any other party or entity, at any facility or incineration vessel owned or operated by another party or entity and containing such hazardous substances.

42 U.S.C. 9607(a)(3). Shell agreed to supply agricultural chemicals to B&B, knowing that its chemicals were routinely spilled and leaked (*i.e.*, disposed of) during the delivery process. The court of appeals properly concluded that, by arranging that transaction, Shell "ar-

ranged for" the "disposal" (through the attendant spilling and leakage) of its hazardous substances.[3]

A. Shell Was Properly Held Liable As An Arranger Under Section 107(a)(3), Based On Its Entry Into Transactions That It Knew Would Directly Result In Disposals Of Hazardous Substances

1. Arranger liability is not limited to transactions designed primarily for disposal

CERCLA provides that individuals or entities that "arranged for" the disposal of hazardous substances may be held accountable for the costs of cleaning up those substances. 42 U.S.C. 107(a)(3). The dictionary defines "arrange" as "to prepare or plan." *Random House Dictionary of the English Language* 116 (2d ed. 1987); see *Webster's Third New International Dictionary* 120 (1976) ("to make preparations"). The term "disposal" is defined specifically in CERCLA, and it includes the *unintentional* acts of spilling and leaking. 42 U.S.C. 6903(3) ("The term 'disposal' means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water."); see 42 U.S.C. 9601(29) (adopting definition of "disposal" in Section 6903(3)). If a party enters into a transaction that it *knows* will *directly* result in disposal of its hazardous substances—including through spilling or leaking—then it is naturally said to "arrange for" the disposal itself. See *United States* v. *Aceto Agric. Chems. Corp.*, 872 F.2d 1373, 1380 (8th Cir.

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[3] The Railroads' brief in this Court does not address whether Shell's conduct gave rise to arranger liability under Section 107(a)(3). In the court of appeals, however, the Railroads argued that the district court had correctly held Shell liable as an arranger, for several of the reasons explained herein. See Railroads Second C.A. Br. 16-38.

1989) (rejecting argument that defendants could be liable as arrangers "only if they *intended* to dispose of a waste") (emphasis added). Section 107(a)(3)'s use of the phrase "by contract, agreement, or *otherwise* arranged for," 42 U.S.C. 9607(a)(3) (emphasis added), reinforces that reading by making clear that the provision covers modes of "arrang[ing]" that do not involve an express contractual commitment.

That understanding of arranger liability also accords with the common-law background against which CERCLA was enacted, of which Congress was presumably aware. See, *e.g.*, *United States* v. *Bestfoods*, 524 U.S. 51, 63 (1998) (holding that common-law principles are to apply unless CERCLA "speak[s] directly to the question"); *Aceto*, 872 F.2d at 1382 (approving use of the common law to interpret CERCLA's arranger-liability provision). Restatement § 427B, for example, provides: "One who employs an independent contractor to do work which the employer knows or has reason to know to be likely to * * * creat[e] * * * a private nuisance, is subject to liability for harm resulting * * * from such * * * nuisance." Cf. Restatement §§ 413, 416, 427, 427A. Arranger liability rests on the same principles. In this case, Shell employed common carriers (and contracted with B&B) to deliver hazardous substances that it knew would spill and leak during every delivery. See Pet. App. 259a; *infra*, pp. 20-23. Common-law understandings therefore support the imposition of liability on a party who arranges a transaction that it knows will directly result in the disposal of hazardous substances.[4]

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[4] As the quotation from Restatement § 427B in the text indicates, a person who employed an independent contractor was traditionally liable not only when the employer possessed actual knowledge that the work would create a nuisance, but also when he "ha[d] reason to know" that

That construction of Section 107(a)(3) is also consistent with CERCLA's "sweeping" remedial purposes. *Bestfoods*, 524 U.S. at 56 n.1 (citation omitted); see, *e.g.*, *Morton Int'l, Inc.* v. *A.E. Staley Mfg. Co.*, 343 F.3d 669, 676 (3d Cir. 2003) ("Our view that 'arranged for' is to be broadly construed is consistent with Congress's overall purpose in enacting CERCLA."). When an entity arranges for activities that it knows will result in the disposal of hazardous substances, the imposition of liability under Section 107(a)(3) ensures that the costs of remediation can be placed on those who are responsible for, or who benefit from, the disposal of hazardous wastes. See p. 3, *supra*; *South Fla. Water Mgmt.* v. *Montalvo*, 84 F.3d 402, 407-409 (11th Cir. 1996) (noting importance for Section 107(a)(3) purposes of defendant's knowledge (or lack thereof) that hazardous substances would be spilled incident to pesticide spraying, because such knowledge would demonstrate that defendant "implicitly agreed to the disposal").[5]

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such a result was "likely." Similarly, under Section 107(a)(3), the owner of hazardous substances may be liable as an "arranger" if he enters into a transaction whose likely consequence is the disposal of hazardous substances, even if the owner lacks actual knowledge that a disposal will occur. Because Shell was shown to have actual knowledge that spills and leaks routinely occurred during the deliveries, the Court need not determine in what additional circumstances arranger liability would be proper.

[5] Similarly, in *Aceto*, a pesticide manufacturer arranged to send its product to a formulator for processing (*i.e.*, converting from technical-grade to commercial-grade pesticide). 872 F.2d at 1375. As an "inherent" byproduct of the processing, the formulator generated hazardous substances, which the formulator disposed of contemporaneously (thereby creating the contaminated site). *Id.* at 1375-1376, 1381. Although disposal of the byproduct was not the purpose of the transaction (like Shell, both parties to the transaction in *Aceto* presumably would

2. *Shell's knowledge and role in the disposal of its hazardous substances during its arrangement with B&B creates arranger liability*

In contesting its liability, Shell relies on a characterization of the arrangement that was rejected by both the district court and court of appeals. Shell asserts (Br. 2, 14-15) that it merely sold a useful product, transported that product to B&B (its customer) by common carrier, and transferred ownership of the product to the customer when the common carrier arrived at the customer's facility. But that is not all that Shell did. As the courts below found, Shell arranged for the delivery and transfer process—in which Shell was "deeply involved," Pet. App. 13a n.5—during which Shell knew disposals of its hazardous substances were a routine occurrence. *E.g.*, *id.* at 259a (noting Shell's "actual knowledge" that spills and leaks of D-D were "inherent in the unloading process"). Accordingly, this was not a situation where disposal of Shell's product was an unanticipated accident; the disposal was a known and inevitable (albeit unwanted) consequence of the transaction that Shell arranged. Shell's conduct therefore falls within the four corners of CERCLA's "arranger liability" provision.

a. It is undisputed that Shell arranged for the delivery of its D-D to B&B's facility. The "Conditions of Sale" between Shell and B&B provided that the "Seller may deliver any Product in any delivery equipment, by any means of transportation and from any shipping

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have preferred no byproduct or disposal), the court of appeals held that the manufacturer was liable as an arranger under Section 107(a)(3). *Id.* at 1382. It explained that a contrary result "would allow defendants to simply 'close their eyes' to the method of disposal of their hazardous substances, a result contrary to the policies underlying CERCLA." *Ibid.*

point that Seller may select." J.A. 583. Shell thus contractually reserved the exclusive authority to, and in fact did, arrange for the delivery of D-D by common carrier tanker trucks to B&B's facility. Pet. App. 124a. Shell owned the D-D at the time such arrangements were made. *Id.* at 124a-125a. The deliveries were made F.O.B. destination, but "Shell still controlled the process of deliveries, regardless." *Id.* at 124a.[6]

Shell also actively inserted itself into, and exercised significant control over, the transfer process when the tanker trucks it hired arrived at B&B's facility. At least until the early 1980s, the common carriers that Shell hired and paid participated in the D-D transfer process and used equipment required by Shell. See, *e.g.*, Pet. App. 119a-120a (relying on testimony of tanker-truck drivers and others in the field that the drivers would unload D-D into B&B's tanks using the truck's equipment); *id.* at 208a-209a ("Before the early 1980s, Shell required the tanker truck driver to have a 30 foot hose and certain couplings and other equipment," and "[b]y the early 1980s, Shell dictated that B&B personnel unload the tanker truck and purchase the 30 foot hose among other unloading equipment."). Shell documentation "referenced the fact that the drivers of the tanker trucks had to have certain equipment for transferring the D-D into the storage tank, evidencing direction and control by Shell." *Id.* at 124a. B&B was also required to follow Shell's manual on handling D-D, which provided

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[6] "F.O.B. destination" generally means that "the seller must at his own expense and risk transport the goods to that place and there tender delivery of them." U.C.C. § 2-319(1)(b) (14th ed. 1995).

detailed loading and unloading procedures, subject to an inspection program. *Id.* at 127a-128a.[7]

b. The record establishes that spills of D-D "were inherent in the common carrier deliveries that Shell arranged for and occurred in the course of every delivery." Pet. App. 252a; see *id.* at 119a-122a. The trial evidence also showed, and the district court found, that "Shell knew that spills and leaks were inherent in the unloading process." *Id.* at 259a. For example, Robert Swain, a former Shell employee responsible for helping to implement Shell's manual on handling D-D, testified that the delivery of Shell D-D to bulk storage "always" resulted in spills. J.A. 64. Swain noted that, while spills during the truck-transfer process can be collected in a little bucket, "[m]ost often, though, back in those days, [the workers] just let it dump on the ground." *Ibid.*

Shell went so far as to account for the spilling and leakage of D-D in its contracts with B&B. Pet. App. 122a, 252a-253a. A Shell marketing agreement with B&B states, in a section entitled "Shrinkage," that "[s]ingle and multiple destination deliveries by common carrier will be allowed 0.5 percent on a weight basis for shrinkage that may occur at the time of unloading," and that the "shrinkage allowance will be deducted off the

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[7] To the extent the courts below relied on Shell's imposition of various requirements, treatment of that fact as relevant to the Section 107(a)(3) analysis does not (as Shell suggests, Br. 31) create a disincentive to the adoption of such safeguards. To the contrary, if shippers know that the process by which their products are delivered results in spills of hazardous substances, they will have greater incentive to prevent such disposals to limit the contamination if they are potentially subject to arranger liability. In any event, abundant evidence beyond Shell's imposition of safety precautions established Shell's awareness that spills and leaks occurred routinely during the deliveries at issue here.

billing invoice." J.A. 498; see J.A. 209 (shrinkage allowances in Shell's bulk-liquid contracts applied to D-D). Based on trial testimony, the district court construed such agreements as providing "a monetary allowance to B&B for product Shell expected to be lost in the process of delivery and storage." Pet. App. 122a; see *id.* at 252a-253a (referring to "spillage allowance" in the Shell-B&B contract).[8]

In sum, based on the extensive trial record, the district court correctly found that "[f]or over twenty years, Shell 'arranged for' the sale for profit of D-D with actual knowledge that D-D would spill and be released into the soil during the delivery and unloading process," Pet. App. 259a, in which "Shell was an active participant," *id.* at 204a. The court of appeals correctly affirmed the district court's decision that Shell is liable under CERCLA because, in light of those circumstances, Shell "arranged for disposal" of hazardous substances.

B. Shell Identifies No Sound Basis For Limiting Arranger Liability Where A Manufacturer Engages In Transactions That It Knows Will Directly Result In Disposals Of Its Hazardous Substances

In addition to contending that Section 107(a)(3) is limited to transactions whose *purpose* is to dispose of

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[8] Although Shell describes that allowance as "a price discount to meet competition" (Br. 30), that explanation is inherently unlikely, since an allowance for "shrinkage" at the time of unloading would be a highly unusual way of providing a discount to adjust for competitors' prices. The district court rejected essentially the same argument, explaining that Shell's "characterization of the spill allowance as a 'pricing' strategy to meet competition is not persuasive," Pet. App. 259a-260a, and Shell identifies no basis for this Court to reject the district court's reasonable interpretation of the documentary record.

hazardous substances, Shell offers three further bases for avoiding arranger liability. Each lacks merit.

1. Lack of intent to dispose of a hazardous substance during a transaction does not preclude arranger liability where the arranger has advance knowledge of the disposal

Shell contends (Br. 18-21) that it cannot be liable under Section 107(a)(3) because its objective was to supply a useful product rather than to dispose of a hazardous substance. As discussed above (pp. _, *supra*), that argument ignores the fact that spills and leaks of hazardous substances were a known and recurring consequence of the deliveries for which Shell arranged. Although the delivery of a useful product was the ultimate *purpose* of the arrangement, Shell's continued participation in the delivery, with knowledge that spills and leaks would result, was sufficient to establish Shell's intent to dispose of hazardous substances.

Shell's invocation (Br. 19) of circuit-court cases involving the "mere sale of a useful product" is therefore misplaced. The question in those cases was whether sellers could be held liable as arrangers for the *ultimate* disposal of the product after the purchaser had incorporated it into another product or had put it to its intended use. In that context, some courts of appeals have held that the seller is not liable as an arranger for the ultimate disposal absent evidence that the sale included an arrangement for that ultimate disposal. See *Freeman* v. *Glaxo Wellcome, Inc.*, 189 F.3d 160, 164 (2d Cir. 1999); *Pneumo Abex Corp.* v. *High Point, Thomasville & Denton R.R.*, 142 F.3d 769, 775 (4th Cir.), cert. denied, 525 U.S. 963 (1998); *Florida Power & Light Co.* v. *Allis Chalmers Corp.*, 893 F.2d 1313, 1317 (11th Cir. 1990);

but cf. *Catellus Dev. Corp.* v. *United States*, 34 F.3d 748, 750-752 (9th Cir. 1994) (arranger liability from sale of spent batteries for extraction of lead plates).

Here, by contrast, Shell was not held liable for contamination resulting from the application of its pesticides (the useful product) to a farmer's fields or the subsequent disposal of the contaminated soil. Rather, its liability is for the portion of product that was never used for its intended purpose but was disposed of at the time of delivery through spilling or leaking. See Pet. App. 52a-53a. The decisions on which Shell relies simply recognize that the causal link between a transaction and a subsequent disposal of the relevant product may sometimes be too attenuated to support arranger liability. That potential limit on Section 107(a)(3) liability has no application here, where the disposal of hazardous substances occurred during deliveries that Shell closely monitored and superintended.[9]

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[9] Shell's reliance (Br. 20-21) on *Amcast Industrial Corp.* v. *Detrex Corp.*, 2 F.3d 746 (1993), cert. denied, 510 U.S. 1044 (1994), is also misplaced. In *Amcast*, the Seventh Circuit held a manufacturer liable as an owner for spills of a hazardous substance that occurred during deliveries from its own trucks to a customer. See *id.* at 750. The court also held that the manufacturer was not liable as an arranger for spills that occurred during a common carrier's delivery of the same substance. See *id.* at 751. The court did not suggest, however, that the manufacturer had exercised any control over the latter deliveries other than hiring the carrier, let alone the extent of control found to have been exercised by Shell here. Nor did it suggest that the manufacturer, like Shell, was aware that disposals (in the form of spills and leakage) of hazardous substances ever occurred during those deliveries, let alone during every delivery. See *ibid.* (limiting arranger liability for "accidents" by transporters hired "in good faith").

2. *Section 107(a)(3) encompasses the disposal of hazardous substances through spills and leaks*

Shell contends (Br. 21-25) that liability under Section 107(a)(3) requires disposal of hazardous waste, and that the term "waste" does not encompass "useful products sold new for consumer use." That argument lacks merit.

Section 107(a)(3) provides that a person is liable if he "arranged for disposal * * * of hazardous substances owned or possessed by such person." 42 U.S.C. 9607(a)(3). There is no dispute that Shell's products constituted "hazardous substances." In arguing that arranger liability may not be premised on disposal of the products at issue here, Shell relies not on Section 107(a)(3), but on definitional provisions under which the term "disposal" is defined to mean "the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water." 42 U.S.C. 6903(3); see 42 U.S.C. 9601(29) (providing that the term "disposal" as used in CERCLA shall have the meaning provided in 42 U.S.C. 6903(3)).

To the extent that the term "hazardous waste" has a narrower reach than the term "hazardous substance," Congress's decision to use the latter term in Section 107(a)(3) must be treated as advertent. Because Section 107(a)(3) specifies the type of material ("hazardous substances") whose disposal is covered, the Court should not ascribe to Congress the self-defeating intent to narrow the range of covered materials through the definition of "disposal." See, *e.g.*, *Louisiana & Nashville R.R.* v. *Mottley*, 219 U.S. 467, 475 (1911) ("We must have regard to all the words used by Congress, and as far as possible give effect to them."). The most natural reading of the various provisions taken together is that, for purposes of determining arranger liability under Section

107(a)(3), 42 U.S.C. 6903(3) identifies the *actions* that constitute "disposal," but Section 107(a)(3) identifies the *object* of those actions, *i.e.*, the materials whose disposal is covered. See Pet. App. 216a-217a.[10]

3. Arranger liability does not require ownership or actual control of the hazardous substance at the time of disposal

Shell contends (Br. 26-27) that, in order to be liable as an arranger under Section 107(a)(3), a manufacturer must either own or have "actual control" of the hazardous substance at the time of its disposal. That is incorrect.

Section 107(a)(3) imposes liability on a person who "by contract, agreement, or otherwise arranged for disposal * * * of hazardous substances owned or possessed by such person." 42 U.S.C. 9607(a)(3). By its terms, that provision applies if the person upon whom liability is imposed owned or possessed the relevant substances when the arrangement for disposal was made. Liability under Section 107(a)(3) does not turn on whether the arranger retained ownership or possession at the time of disposal. The provision also clearly contemplates that some "other party or entity" may dispose

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[10] Shell's argument, if accepted, could not be limited to arranger liability under Section 107(a)(3). For example, Section 107(a)(2) imposes liability on "any person who at the time of disposal of any hazardous substance owned or operated any facility at which such hazardous substances were disposed of." 42 U.S.C. 9607(a)(2). Under Shell's reading, spills or leaks of a potentially useful product (*e.g.*, cyanide) into the soil or water would not constitute "disposal" of that substance, and Section 107(a)(2) would not apply. That reading would undermine Congress's effort to cover inadvertent spills and leaks by including them within the definition of "disposal," and it would leave a substantial unintended gap in CERCLA's remedial scheme.

of the hazardous substance. *Ibid.* Accordingly, a person who arranges to have his hazardous substances disposed of by another is liable for the consequences of that disposal arrangement, regardless of which entity (the source or disposer) has title or possession when disposal occurs.

Shell's further contention (Br. 26-27) that, at a minimum, an arranger must exercise "actual control" of the hazardous substances at the time of disposal is also inconsistent with the statutory text. Such a requirement would read the phrase "by contract, agreement, or otherwise arranged for" out of Section 107(a)(3). In any event, as discussed above (pp. 20-23, *supra*), Shell did exercise substantial control over the hazardous substances at the time of disposal.

If ownership or actual control at the time of disposal were legally dispositive, an arranger could easily avoid liability under Section 107(a)(3). In the ordinary case when a waste hauler picks up a drum of hazardous substances from the arranger, the drum is no longer possessed or controlled by the arranger. And the parties could readily provide by contract for the immediate transfer of title to the hauler at the time of pickup. Congress surely did not intend for arrangers to escape CERCLA liability in that prototypical arrangement for disposal of hazardous substances. See S. Rep. No. 848, *supra*, 31, 33-34 (CERCLA's liability regime "provides incentives to all involved with hazardous substances to assure that such substances are handled with the utmost care").[11]

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[11] Neither the district court nor the court of appeals based its arranger liability holding on a determination of which entity (Shell or B&B) held title to the D-D after its tender for delivery. The district court found that the point at which title to the D-D transferred from Shell to

II. THE DISTRICT COURT ERRED IN REFUSING TO HOLD PETITIONERS JOINTLY AND SEVERALLY LIABLE WHEN PETITIONERS FAILED TO ESTABLISH A REASONABLE BASIS FOR APPORTIONMENT

The court of appeals correctly held that, although the single harm at B&B's facility was theoretically capable of apportionment under established common-law principles, petitioners—which elected to pursue a "'scorched earth,' all-or-nothing approach to liability," Pet. App. 236a—had failed to prove any reasonable basis for determining their respective contributions to that harm. The thrust of the court of appeals' analysis was not that a more precise and defensible apportionment could have been made based on the record before the district court. Rather, the court of appeals explained that, largely because petitioners had pursued a trial strategy of denying *any* liability for the costs of the governments' cleanup activities, the existing evidentiary record did not provide a reliable basis for apportionment. There is no basis for the Court to overturn that determination.

B&B was not as clear-cut as Shell suggests (Br. 5, 26). As the court explained, if a tanker truck arrived at B&B's facility and began unloading the D-D, but it subsequently became apparent that the bulk storage tank was inadequate for receiving and storing the D-D, Shell had the right to direct the tanker truck to return to Shell's facility. Pet. App. 212a. Thus, although B&B gained "stewardship" once Shell's tanker truck arrived at the facility, legal title did not necessarily pass to B&B at that time. *Id.* at 124a, 212a.

A. Consistent With Restatement Principles, CERCLA Liability For A Single Harm Is Joint And Several Unless The Liable Party Proves A Reasonable Basis For Apportionment

1. When the government performs its own cleanup of a facility, Congress provided, subject to limited affirmative defenses not applicable here, that four classes of persons are liable for "*all* costs of removal or remedial action incurred by the United States Government * * * not inconsistent with the national contingency plan." 42 U.S.C. 9607(a)(4)(A) (emphasis added).[12] That provision reflects Congress's considered judgment that, as between those with a specified connection to hazardous substances and those with none (*i.e.*, the taxpaying public), the former should be responsible for the costs of cleanup. See 126 Cong. Rec. 31,978 (1980) (statement of Rep. Jeffords) (CERCLA "places the costs of releases of hazardous waste on the sector most responsible for pollution and which benefits most from chemical production rather than on the victim or taxpayers."); p. 3, *supra*.[13]

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[12] Petitioners do not contend that the United States' costs were "inconsistent with the national contingency plan."

[13] Contrary to Shell's suggestion (Br. 25 n.7, 43), the availability of the Superfund to finance cleanups does not demonstrate that Congress intended the Superfund, rather than the parties liable under CERCLA, to bear the cost of cleanups when one responsible party is insolvent. Although the United States may use the Superfund (when certain statutory conditions are met) to finance cleanup efforts, Congress intended that the fund would be replenished through cost-recovery suits brought under CERCLA Section 107(a) so that the covered parties that CERCLA deems responsible for contamination bear the cost. See *Bestfoods*, 524 U.S. at 55-56; cf. S. Rep. No. 848, *supra*, 13. Congress similarly did not intend the now-expired taxing regime for the Superfund to release from liability manufacturers who otherwise qualify as liable

CERCLA does not specifically address the proper allocation of cleanup costs in cases where multiple parties share responsibility for contamination at a particular facility. The courts of appeals have uniformly held, however, and petitioners agree, that the decision whether to impose joint and several liability under those circumstances, or instead to apportion the costs of cleanup among the various responsible parties, should be guided by common-law principles. See pp. 3-4, *supra*; Shell Br. 32; Railroads Br. 7. Petitioners also agree (Shell Br. 37; Railroads Br. 6), consistent with Congress's apparent endorsement of the approach taken in the seminal case of *Chem-Dyne* (H.R. Rep. No. 253, 99th Cong., 1st Sess. Pt. I, at 74 (1985)), that Restatement principles provide the starting point for that inquiry.[14]

2. Under the Restatement, damages for a single harm can be apportioned among multiple causes only if "there is a reasonable basis for determining the contri-

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parties under CERCLA. See Letter from GAO to Hon. James M. Jeffords regarding the GAO-04-475R Superfund Program 1 (Feb. 18, 2004).

[14] As noted above, all references to the Restatement refer to the Restatement (Second). In May 1999, the American Law Institute adopted the Restatement (Third) Torts: Apportionment of Liability (Third Restatement), primarily in response to the increased use of comparative responsibility. See *id.* § 1, cmt. a. The Third Restatement employs the same basic approach to apportionment as the Restatement. Compare Third Restatement § 26 with Restatement § 433A. In any event, the Restatement was in effect both when CERCLA was originally enacted and when it was amended in 1986, and it is therefore the relevant source of common-law norms. In addition, many States still retain full joint and several liability, and most of the recent departures from that traditional rule have come through legislative enactments, not judicial decisions developing common-law principles. See *Norfolk & W. Ry.* v. *Ayers*, 538 U.S. 135, 164-165 (2003).

bution of each cause to a single harm." Restatement § 433A(1)(b). When two or more liable parties bring about a single harm, and one or more of them seeks to limit its liability on the basis that the harm is capable of apportionment, the burden of proof as to the apportionment is on such party. Restatement § 433B(2). That burden includes both the burden of production (*i.e.*, of presenting evidence sufficient to establish its share of the harm) and the burden of persuasion (*i.e.*, of demonstrating by a preponderance of the evidence that apportionment is warranted). Restatement § 433B cmt d. That is because, "[a]s between the proved tortfeasor who has clearly caused some harm, and the entirely innocent plaintiff, any hardship due to lack of evidence as to the extent of the harm caused should fall upon the former." *Ibid.* Petitioners do not dispute that the burden of proving a reasonable basis for apportionment is on CERCLA defendants. See Shell Br. 37; Railroads Br. 30.

The Restatement recognizes that "[t]here are kinds of harm which, while not so clearly marked out as severable into distinct parts, are still capable of division upon a reasonable and rational basis, and of fair apportionment among the causes responsible." Restatement § 433A cmt. d. The Restatement also gives various examples of situations where "reasonable assumption[s]" may be made, explaining, *inter alia*, that if cattle of two or more owners trespass and destroy a crop, the harm may be apportioned among the owners on the basis of the number of cattle owned by each. *Ibid.* Similarly, if two factories pollute a stream and interfere with another's use of the water, the harm may be apportioned "on the basis of evidence of the respective quantities of pollution discharged into the stream." *Ibid.*

The Restatement also recognizes, however, that "[c]ertain kinds of harm, by their very nature, are normally incapable of any logical, reasonable, or practical division." Restatement § 433A, cmt. i. As Congress was well aware, that will often be the case for the harms targeted by CERCLA: "An indivisible harm is frequently the situation at hazardous waste sites where many parties have contributed to the contamination or other endangerment and there are no reliable records indicating who disposed of the hazardous wastes (or in what quantities)." 126 Cong. Rec. at 31,966 n.* (Letter from Assistant Attorney General, Office of Legislative Affairs to Chairman, Subcomm. on Transportation and Commerce, House Comm. on Interstate and Foreign Commerce, 96th Cong., 2d Sess. (Dec. 1, 1980)). Thus, while the Restatement allows for the limited use of assumptions to determine the contribution of each cause to a single harm, those assumptions must be reasonable, based on the evidence, and grounded in principles of causation.

The Restatement makes clear that, where harms cannot be apportioned on a reasonable basis, the court should not make "an arbitrary apportionment for its own sake" or simply to mitigate the severity of joint and several liability. Restatement § 433A cmt. i. Indeed, the Restatement contemplates that joint and several liability may be imposed even when "some of the causes are innocent." *Ibid.* Accordingly, the courts of appeals have recognized that apportionment under the Restatement "is guided not by equity" but "by principles of causation alone." *United States* v. *Hercules, Inc.*, 247 F.3d 706, 718 (8th Cir.), cert. denied, 534 U.S. 1065 (2001); see, *e.g.*, *United States* v. *Township of Brighton*, 153 F.3d 307, 319 (6th Cir. 1998); *United States* v. *Monsanto*, 858 F.2d 160, 171 n.22 (4th Cir. 1988), cert. denied, 490 U.S.

1106 (1989); *United States* v. *Rohm & Haas Co.*, 2 F.3d 1265, 1280 (3d Cir. 1993); cf. *United States* v. *Atlantic Research Corp.*, 127 S. Ct. 2331, 2339 (2007) ("a defendant PRP in such a § 107(a) suit could blunt any inequitable distribution of costs by filing a § 113(f) counterclaim").

If a party found liable under Section 107(a)(4)(A) cannot establish a basis for apportionment with the reliability that Restatement principles require, but nevertheless maintains that joint and several liability is unfair or disproportionate under the particular circumstances of the case, it may pursue a contribution action against other responsible parties under CERCLA Section 113(f)(1). Section 113(f)(1) provides that, "[i]n resolving contribution claims, the court may allocate response costs among liable parties using such equitable factors as the court determines are appropriate." 42 U.S.C. 9613(f)(1); see Restatement § 886A(2) (right of contribution exists for tortfeasor "paying more than his equitable share of the common liability"). That provision gives the court broad authority to devise a fair allocation of costs *among* the responsible parties *without* transferring those costs to taxpayers who have no particularized nexus to the relevant contamination. That provision would be largely superfluous if the court had similar equitable discretion in making the initial determination of liability under Section 107(a)(4)(A).

To be sure, the availability of a Section 113(f)(1) contribution action may be of little practical benefit to petitioners here in light of B&B's insolvency. The Restatement does not suggest, however, that the standards for proving apportionment may be relaxed in such cases in order to compensate for the diminished likelihood of obtaining contribution. To the contrary, the Restate-

ment specifically identifies the insolvency of a co-defendant as a factor weighing *against* apportionment. The Restatement provides that, even if a defendant carries its burden on apportionment, the defendant may still be held jointly and severally liable if the circumstances are exceptional, as when "one of two tortfeasors is so hopelessly insolvent that the plaintiff will never be able to collect from him the share of the damages allocated to him." Restatement § 433A cmt. h.[15] That principle is consistent with CERCLA's purpose of protecting the public fisc.[16]

B. The District Court Erred As A Matter Of Law By Declining To Impose Joint And Several Liability After Petitioners Failed To Establish Any Reasonable Basis To Apportion Liability

It is undisputed that this case involves a single harm, consisting primarily of a plume of contaminated groundwater that threatens the drinking water supply. Pet.

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[15] Because the court of appeals concluded that petitioners had failed to establish a sufficient basis for apportionment under general Restatement principles, it declined to determine what effect Restatement § 433, comment h, might otherwise have on the apportionment analysis. See Pet. App. 32a n.27. This Court likewise need not consider comment h if it agrees that the district court's apportionment lacked a reasonable evidentiary basis. If this Court disagrees, however, and concludes that the district court's apportionment was otherwise sound, comment h provides an alternative basis for affirming the judgment below.

[16] Some courts have suggested that, in light of that purpose and CERCLA's strict-liability regime, the burden of proving divisibility in CERCLA cases should be more demanding than under general Restatement principles. See, *e.g.*, *United States* v. *Capital Tax Corp.*, 545 F.3d 525, 535 & nn.8-9 (7th Cir. 2008); *Hercules, Inc.*, 247 F.3d at 715-717. The Court need not decide whether that view is correct because petitioners failed (indeed, made no meaningful effort) to establish bases for apportionment that would satisfy Restatement standards.

App. 245a-246a. At trial, both the Railroads and Shell contended that they did not cause *any* part of that harm. Neither the Railroads nor Shell attempted (even in the alternative) to present or prove a reasonable basis for determining the contribution of each to the contamination.

Once the district court rejected petitioners' theory of the case and determined that petitioners were liable parties, the imposition of joint and several liability should have followed naturally from petitioners' failure even to attempt to identify and prove any reasonable basis for apportionment. Instead, the district court, believing that the imposition of joint and several liability would be inequitable under the circumstances of this case, scoured the record for evidence on which very rough approximations of petitioners' comparative responsibilities might be based. It may well be that no demonstrably *better* apportionment could have been made given the record before the court. The absence of evidence from which a sufficiently reliable apportionment could be drawn, however, was the direct result of petitioners' own litigation strategy, and there is no basis for this Court to relieve petitioners of the consequences of that strategy now that it has failed to absolve them of all liability. In any event, under established Restatement principles, the party seeking apportionment bears the burden of proof, and the court of appeals correctly held that petitioners failed to carry their burden here.

1. The Railroads' trial theory was that no activity on the Railroad parcel resulted in contamination at the facility. Although the Railroads provided expert testimony purporting to estimate the total amount of contamination in the facility's subsurface, that testimony assumed that none of the facility's contamination was

caused by disposals on the Railroad parcel. J.A. 304-305; Railroads C.A. E.R. 188-191. Accordingly, the Railroads' only argument and evidence as to their contribution to the harm was that they contributed zero.

Shell took a similar tack. Shell's expert testified that it was "infinitely more likely than not" that D-D could not get from the delivery areas to the areas from which it posited that the contamination had originated. J.A. 283-284. Thus, Shell's trial theory was that Shell was not a cause of the harm at all.

The district court, however, rejected the Railroads' and Shell's theories and evidence. The court further found that Shell "did not present evidence how its products' contribution to the contamination at the Arvin facility can be apportioned." Pet. App. 252a. Rather, the court explained, the Railroads' and Shell's trial strategy was a "'scorched earth,' all-or-nothing approach to liability," in which "[n]either acknowledged an iota of responsibility." *Id.* at 236a.

That should have been the end of the matter. Litigants must live with the consequences of their own strategic choices in the adversarial system. See, *e.g.*, *Hormel* v. *Helvering*, 312 U.S. 552, 556 (1941) ("[O]ur procedural scheme contemplates that parties shall come to issue in the trial forum vested with authority to determine questions of fact. This is essential in order that parties may have the opportunity to offer all the evidence they believe relevant to the issues which the trial tribunal is alone competent to decide."). This Court has so held in many contexts, including in capital cases. See, *e.g.*, *Williams* v. *Taylor*, 529 U.S. 420, 437 (2000) (state prisoner "must be diligent in developing the record and presenting, if possible, all claims of constitutional error" and cannot pursue on habeas "facts and issues which a

prisoner made insufficient effort to pursue" earlier). There is no reason for a different rule in this context, where (as here) sophisticated parties are represented by sophisticated counsel.[17] When a CERCLA defendant categorically denies liability and the court rejects that position, the defendant faces the prospect of joint and several liability and cannot go back and claim an entitlement to apportionment based on a record that does not support apportionment.[18]

2. Rather than hold petitioners to the consequence of their own litigation strategy, the district court "independently" performed what it called "the equitable apportionment analysis demanded by the circumstances of the case." Pet. App. 236a-237a. The district court's decision to undertake that apportionment without the parties' assistance rested on three interrelated legal errors.

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[17] In *United States* v. *Alcan Aluminum Corp.*, 315 F.3d 179, 186-187 (2d Cir. 2003), cert. denied, 540 U.S. 1103 (2004), the CERCLA defendant (like petitioners) argued that its liability was zero. The Second Circuit rejected that argument, determined that the defendant had introduced no evidence on the limited nature of its liability, and therefore held it jointly and severally liable. *Ibid.*

[18] Largely for the reasons stated in the text, the Railroads are wrong in suggesting (Br. 57-59) that the imposition of joint and several liability in this case raises serious constitutional concerns. Contrary to the Railroads' assertion (Br. 58), the court of appeals did not "interpret[] CERCLA to impose joint and several liability in all but extraordinary cases," and any constitutional issues that such a scheme might implicate are not presented here. Rather, petitioners pursued a deliberate strategy of disclaiming *all* liability and forgoing any effort to establish the share of the harm for which they could properly be held responsible. See Pet. App. 47a (noting that Shell likely could have provided evidence supporting apportionment but declined to do so, "most likely because Shell put its eggs in the no-liability basket"). Holding petitioners to the consequences of that choice creates no meaningful constitutional difficulties.

First, the district court assumed that the "circumstances of this case"—primarily the insolvency of the party (B&B) most responsible for the contamination—"demanded" apportionment. Pet. App. 237a; see *id.* at 245a (deeming it "manifestly inequitable" to allocate B&B's orphan share to petitioners). That was incorrect. As explained above (pp. 34-35, *supra*), the Restatement specifically discusses the example of an insolvent co-defendant. Rather than identifying that circumstance as a ground for relaxing the standards governing apportionment, the Restatement treats the insolvency of a co-defendant as a factor that may support joint and several liability even if apportionment would be otherwise justified. That approach furthers CERCLA's purpose of ensuring that governmental plaintiffs (and the taxpayers they represent) are not required to bear cleanup costs when there exists a solvent party with a cognizable nexus to the contamination. See p. 3, *supra*.[19] Although the Restatement does not *preclude* apportionment in cases involving insolvent co-defendants, it is flatly inconsistent with the district court's treatment of such insolvency as a factor *supporting* apportionment.

Second, the district court treated petitioners and the United States and the State as equally responsible for the absence of evidence and argument directed at the question of apportionment. In explaining its decision "to independently perform the equitable apportionment analysis," the court stated that "[a]ll parties" had "ef-

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[19] See 126 Cong. Rec. at 26,788 (statement of Rep. Jeffords) ("The imposition of mandatory apportionment could result in attempts by the parties liable for a release of hazardous waste to allocate a large portion of the liability to insolvent defendants. * * * We should not allow the responsible parties to evade the costs of cleanup at the expense of the taxpayers.").

fectively abdicated providing any helpful arguments to the court." Pet. App. 236a-237a. As the district court elsewhere recognized, however, "[o]nce [CERCLA] liability has been established, the burden shifts to the defendant to demonstrate, by a preponderance of the evidence, that there exists a reasonable basis for divisibility." *Id.* at 235a. Because petitioners bore the burden of proof on this issue, the governments' failure to provide evidence and argument supporting a *different* apportionment (or establishing that apportionment was infeasible) could not justify the court's use of estimates that would otherwise have been insufficiently precise.

Third, the district court conflated the present cost-recovery suit under Section 107(a)(4)(A) with the distinct, equitable *contribution* action available to petitioners under Section 113(f). The court stated that, "[w]hile § 113(f)(1) directs courts to allocate cleanup costs between responsible parties 'using such equitable factors as the court determines are appropriate,' it does not limit courts to any particular list of factors. The statute's expansive language instead affords a district court broad discretion to balance the equities in the interests of justice." Pet. App. 239a. The district court's evident premise—*i.e.*, that the court possessed the same "broad discretion" in determining whether and how liability should be apportioned in the cost-recovery suit under Section 107(a)(4)(A)—is wholly incorrect. See pp. 33-35, *supra*.[20]

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[20] The district court repeatedly confirmed throughout the post-trial proceedings that its entire apportionment analysis—including but not limited to the decision to undertake it—was driven by its view that the imposition of joint and several liability would be inequitable under the circumstances of this case. At the hearing on the parties' motions to amend the court's findings of fact and conclusions of law, for example,

The legal errors described above led the district court to undertake an intricate apportionment analysis despite the failure of the parties who bore the burden of proof to offer any pertinent evidence or argument. The court's mode of procedure also deprived the government of a fair opportunity to respond to the court's theories of apportionment and to rebut their factual underpinnings—an opportunity the governments would have had if those theories had been advanced by petitioners themselves. See, *e.g.*, *Burdett* v. *Miller*, 957 F.2d 1375, 1380 (7th Cir. 1992) (reversing the trial court where it "changed the plaintiff's theory of the case after the time had passed for the defendant to present contrary evidence").

Petitioners suggest that, despite the rough nature of the district court's approximations, the ultimate apportionment should be sustained because the court chose to err on the side of overestimating petitioners' contributions to the harm at the relevant facility. See Railroads Br. 46-47. The Railroads emphasize (*ibid.*) that the district court provided an adequate "safety margin," increasing the Railroads' estimated share from 6% to 9% to allow for calculation errors. Because the correct number is likely lower than 9%, the Railroads argue (Br. 47), imposing joint and several liabilty is unjustifiable.

That line of argument fails on two levels. First, given the significant gaps in the district court's apportion-

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the court stated that it "did what [it] thought was right in accordance with the law and equity because we still have an allocation and equitable proceeding." J.A. 612. But to the extent the court perceived an overriding equitable imperative to proceed with apportionment notwithstanding the sparseness of the record before it, those evidentiary gaps were the result of petitioners' own litigation choices.

ment analysis as discussed in Pt. II(C), *infra*, it is speculative whether the court's apportionment actually overstates petitioners' appropriate shares of the total liability. Second, under applicable Restatement principles, the propriety of apportionment turns on whether the liable party has established through evidence the portion of the harm that it caused. Petitioners cite no authority for the proposition that a liable party can in effect stipulate to a percentage share that lacks such an evidentiary foundation simply because it appears likely that the share overstates its actual contribution to the overall harm.

C. The District Court's Unsubstantiated Assumptions And Gross Approximations Do Not Constitute A Reasonable Basis To Apportion The Harm In This Case

The district court's equitable apportionment analysis, conducted on a sparse record without meaningful argument from petitioners, involved an array of unsubstantiated assumptions and gross approximations. Those include: (1) that each party's share of the ultimate harm is proportional to each's party's volumetric contribution to the contamination (irrespective of the relative toxicities and costs of remediation of the different chemicals); (2) that the Railroads' volumetric contribution to the contamination is proportional to the percentage of its land area and duration of ownership; (3) that dinoseb and Nemagon comprised 2/3 of the contamination, so that the Railroads' liability should be further reduced by 1/3 (because no D-D originated from their parcel); and (4) that Shell's volumetric contribution to the contamination can be estimated from anecdotal evidence and incomplete sales records. As discussed below, the district court's assumptions and ap-

proximations do not provide a reasonable basis for apportioning the harm in this case.

1. There is no reasonable basis to assume that each petitioner's share of the ultimate harm is proportional to its volumtric contribution to the contamination

As an initial matter, there is no reasonable basis to assume that the harm in this case is divisible. See Pet. App. 172a ("plume poses an indivisible threat"). Under the Restatement, joint and several liability is appropriate "where either cause would have been sufficient in itself to bring about the result," as in the case of "merging fires which burn a building" or two companies polluting a stream from which cattle drink and die. Restatement § 433A cmt. i.

In this case, the threat to drinking water and need for remediation presumably would exist even if the plume contained only the hazardous substances traceable to Shell's spillage or only the hazardous substances from the Railroad parcel. Either source of contamination therefore likely was "sufficient in itself to bring about the result" (*i.e.*, contamination requiring CERCLA remediation) here. See Restatement § 433A cmt. i.[21] It is possible that, even if pollution from either

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[21] As the Seventh Circuit has explained for cases in which contamination may be attributable to multiple sources:

> It is easy to imagine a case in which, had X not polluted a site, no clean-up costs would have been incurred; X's pollution would be a necessary condition to those costs and it would be natural to think that he should pay at least a part of them. But suppose that even if X had not polluted the site, it would have to be cleaned up—and at the same cost—because of the amount of pollution by Y. * * * [T]hat should not necessarily let X off the hook. * * * In that case, the conduct of X and the conduct of Y would each be a sufficient but not

Shell or the Railroads standing alone would have induced EPA to undertake remediation, the presence of contaminants from multiple sources compounded the environmental harm or caused the remediation to be more costly. Petitioners made no effort, however, to prove at trial that this was so. EPA based its remediation decisions at the facility not on the total mass or volume of the contaminants, but rather on the fact that the level of contamination from each primary contaminant greatly exceeded the applicable maximum concentration levels set by the EPA and State. Pet. App. 97a. Accordingly, absent a reasonable basis in the record to find otherwise (and petitioners failed to provide one), petitioners should be jointly and severally liable for the entire harm on that ground alone.

Even assuming that petitioners' respective contributions were not independently sufficient to have caused the harm, there is no reason to assume that the ultimate harm is directly proportional to the volume of hazardous substances in the plume attributable to each petitioner. The plume of contamination underlying the facility contains multiple substances, including dinoseb and constituents of D-D and Nemagon. Pet. App. 174a. The share of harm from a particular volume of waste therefore depends on a number of variables, including the respective levels of toxicity and cost of remediation for each constituent present. (For example, if dinoseb were much more toxic or much more expensive to extract than D-D or Nemagon, that might be a basis to conclude

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a necessary condition of the clean up, and it would be entirely arbitrary to let either (or, even worse, both) off the hook on this basis.

Browning-Ferris Indus. of Ill., Inc. v. *Ter Maat*, 195 F.3d 953, 958 (7th Cir. 1999), cert. denied, 529 U.S. 1098 (2000).

that the Railroads are responsible for more of the harm.) Consistent with their trial strategy of simply denying all liability, petitioners identify no record support for the district court's assumption that each party's contribution to the overall harm is proportional to the relative volume of hazardous substances attributable to it. As a result, the district court lacked a reasonable basis for apportioning the harm based on the volumes of contamination attributable to each petitioner.[22]

2. There is no reasonable basis to assume that the Railroads' contribution to the contamination was proportional to its land area and duration of ownership

Even assuming that the volume of the Railroads' contribution to the contamination is a sufficient basis on which to apportion harm, the district court's estimate for that contribution lacks a reasonable basis.

a. The Railroads assert (Br. 41-45) that the district court's analysis falls within the "long tradition" of apportionment of harm based on geography and time. That is incorrect. With respect to geography, the court concluded that, because the Railroads owned only 19.1%

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[22] The district court's reliance on *In re Bell Petroleum Services, Inc.* to support such an assumption is misplaced, because that case involved a *single* hazardous substance (such that potential variations among the toxicities and costs of remediation of various constituents were not at issue). See Pet. App. 248a (citing 3 F.3d 889, 903-904 (5th Cir. 1993)). The Restatement's illustrations (see p. 32, *supra*) of trespassing cattle damaging crops, or two factories polluting a stream and interfering with another's use of the water, are similarly inapt. The presumption underlying those examples—that each cause of the harm has roughly the same effect—does not apply here. As noted above, the plume contains various hazardous substances, but there is no evidence as to relative toxicities of those substances or the relative costs of remediating them.

of the facility, the Railroads' liability should be reduced proportionally. But that is not an appropriate use of geographic divisibility. Geographic divisibility is used to differentiate between two or more distinct harms, such as non-contiguous areas of contamination or distinct plumes of groundwater contamination, rather than to apportion responsibility for a single harm. See, *e.g.*, *Hercules, Inc.*, 247 F.3d at 717-718. For example, if two portions of a landfill are contaminated with hazardous substances and remediated, a liable party could demonstrate that none of its hazardous substances contaminated one of those portions. Indeed, that principle explains why Shell was not liable for the geographically-isolated dinoseb hot spot, which did not contain Shell chemicals. Pet. App. 56a & n.35.

The Railroads identify no case where a court has divided a single harm based on the percentage of the facility that a liable party owned. The most analogous case of which the government is aware confirms that the fraction of the facility that the Railroads owned is not a reasonable basis to determine the harm attributable to it. See *United States* v. *Rohm & Haas Co.*, 2 F.3d 1265 (3d Cir. 1993), overruled on other grounds by *United States* v. *E.I. DuPont De Nemours & Co.*, 432 F.3d 161, 162-163 (3d Cir. 2005) (en banc). In *Rohm & Haas Co.*, the Third Circuit held jointly and severally liable a party that owned only 10% of the land area of the facility at issue. 2 F.3d at 1280-1281. In doing so, the Third Circuit rejected the party's request for apportionment based on its percentage of ownership, explaining that "[t]he fact that [defendant] only owns a portion of the site says nothing about what portion of the harm may

fairly be attributed to it." *Id.* at 1280. The same is true here.[23]

Even assuming that there was a reasonable basis to find that spills on the Railroad parcel were proportional to its size, the district court had no reasonable basis for assuming whether those spills were more or less likely to contaminate the subsurface. That would depend on a number of variables—*e.g.*, the presence of water, properties of the particular contaminant, porosity of the surface and soil, wind and temperature—for which the district court failed to account. Without knowing more

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[23] The Railroads' contention (Br. 48-51) that divisibility based on geography is particularly appropriate given EPA's latitude in defining a CERCLA "facility" misses the mark. First, the text of Section 107(a)(1)-(2) makes clear that Congress chose to assign liability for contamination based on ownership of a facility rather than on ownership of a particular tract of land. The Railroads do not dispute that ownership of *part* of the facility brings them within the statute's coverage. Second, while landowners are free to argue that EPA's designation of a particular "facility" is overly broad, the Railroads here failed to challenge EPA's inclusion of their parcel in its initial designation of the facility (despite actual knowledge of that designation), and they did not appeal the district court's conclusion that the Railroad and B&B parcels are a single facility. Pet. App. 113a, 172a-173a. Third, the Railroads did not attempt at trial to show that they caused contamination in one isolated part of the facility but not another. Fourth, the Railroads' characterization (Br. 4) of themselves as innocent landowners ignores the fact that the Railroads profited from their lease with B&B and stood by while B&B released hazardous wastes into the environment. As the district court noted, "[a]s the lessor-land owner, the Railroads had a responsibility to ensure that all activities affecting their leased parcel complied with all applicable environmental laws." *Id.* at 258a-259a. It is also significant in that regard that, although CERCLA provides a form of "innocent owner" defense in certain cases where contamination is caused by "an act or omission of a third party," the defense is unavailable if the relevant "act or omission occurs in connection with a contractual relationship" with the landowner. 42 U.S.C. 9607(b)(3).

about those variables, in conjunction with the timing and location of the releases, the relative level of *spills* on each parcel says little about the relative level of actual *contribution* to the harm from each parcel. Where the Railroads' only trial evidence—that the activity on the Railroad parcel did not contribute at all to the harm at the facility—was rejected by the district court, there is no reasonable basis for determining the relative volumetric contribution from the Railroad parcel to the overall contamination. See Pet. App. 248a ("no party has specifically documented the relative contributions of contamination from either parcel"); *id.* at 252a ("no evidence to quantify the difference in volume of the releases" from the Railroad and B&B parcels).

b. Nor is this a situation where, as the Railroads assert (Br. 44-45), the harm is divisible based on time (*i.e.*, based on the fact that the Railroads were owners for 45% of the facility's lifespan). The Restatement's conception of temporal divisibility is very different from that adopted by the district court and now endorsed by the Railroads. The Restatement provides that "if two defendants, independently operating the same plant, pollute a stream over successive periods, it is clear that each has caused a separate amount of harm, limited in time, and that neither has any responsibility for the harm caused by the other." Restatement § 433A cmt. c. In that example, it is the same plant—presumably generating the same pollution at the same rate—such that the time each defendant operated the plant may be a reasonable approximation of the harm to the stream it caused.

The harm here, however, was not caused by *successive* operation of the *same* harm-causing activity. Rather, the addition of the Railroad parcel permitted

B&B's facility to expand—presumably expanding its harm-causing activities. Thus, unlike in the Restatement example, there is no reasonable basis to assume that the harm is proportional to the duration of operation. To the contrary, it is more reasonable to assume that the facility *increased* its contaminating activities after the Railroads became involved, such that temporal divisibility would *underestimate* their contribution.

The district court's approach also cannot be reconciled with the fact that Section 107(a)(1) makes the *current* owner and operator of a facility liable, even if all the contamination occurred before its ownership. Under the district court's temporal approach, that owner's share of liability would always be zero. That could not have been what Congress had in mind. The prospect of that anomalous result shows not only that the district court's use of temporal divisibility was flawed, but also that landowner liability is not readily divisible in the same way as operator or arranger liability.

3. There is no reasonable basis for the district court to assume that 2/3 of the contamination was from dinoseb and Nemagon (and thus discount the Railroads' liability by 1/3)

The district court discounted the Railroads' liability by 1/3 based on its assumptions that none of the D-D contamination requiring remediation originated on the Railroad parcel and that the other two chemicals (dinoseb and Nemagon) contributed to 2/3 of the overall contamination. Pet. App. 251a. The first premise is dubious at best,[24] and the court identified no record sup-

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[24] The district court's premise that no D-D originated from the Railroad parcel conflicts with its other findings. For example, the court calculated that the checking of filters on D-D rigs resulted in D-D spills

port for the proposition that dinoseb and Nemagon constituted 2/3 of the total contamination. The supposition (even if true) that two of three contaminants came from the Railroad parcel does not support the district court's conclusion that those two chemicals caused two-thirds of the harm.

4. There is no reasonable basis for using spillage estimates from anecdotes and incomplete records to determine Shell's contribution to the contamination

The district court erred in two ways in its calculation of Shell's volumetric contribution to the contamination. First, the court piled one unsupported assumption onto another to craft its own estimate of the amount of D-D spilled during Shell-controlled deliveries as compared to the total amount of D-D spilled at the facility. Second, the district court's calculation depends on the assumption that every spill of D-D caused the same amount of contamination—an assumption contradicted by the evidence.

a. The district court's estimate of D-D spilled during Shell-controlled deliveries hinges on its assumption that three gallons were spilled during every delivery. See Pet. App. 254a ("It is further assumed that, on average, three gallons spilled during every delivery."). The court's assumption, based on sparse anecdotal evidence (*e.g.*, J.A. 125), fails to account for the obvious possibil-

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totaling 20,470 or more gallons, by far the single largest component of the court's total estimated D-D spills of 31,212 gallons. Pet. App. 256a. In turn, the court found that "D-D rigs were parked on the Railroad parcel" (*id.* at 91a); that "[b]efore taking D-D rigs to the field, B&B servicemen put on rubber gloves, opened the strainer caps and checked the filters;" and that such filter checks "resulted in spills of D-D onto the ground" (*ibid.*). The court's own findings therefore indicate that significant D-D spills occurred on the Railroad parcel.

ity that such D-D spills could have been larger on a regular basis. The district court's further estimate that there were 27 Shell-controlled D-D deliveries per year lacks a reasonable basis as well. See Pet. App. 253a-254a. To reach that figure, the court concluded that Shell D-D sales "average[d]" 122,390 gallons per year over the entire 23-year period for which Shell sold agricultural chemicals to B&B at the Arvin Site. *Ibid.* (The court then divided that by an estimated tanker truck delivery capacity of 4,500 gallons to conclude that there were 27 deliveries per year.) *Ibid.* The court based its "average," however, on just a few years of sales data. *Id.* at 89a-90a, 253a. The court did not explain on what basis it assumed that those years were representative of the entire 23 years, and it failed to address potential variables such as market conditions or customer demand. *Ibid.* The court's reliance on that potentially unrepresentative sample was particularly misplaced because Shell bore the burden of proof on apportionment and was in the best position to produce the full complement of sales records.

The district court applied the same kinds of assumptions to "calculate" that D-D spills from non-Shell controlled activities totaled 29,349 gallons, despite acknowledging that such spills "are not quantified." Pet. App. 254a ("it is assumed that a spill ranged from a cup to a quart" during transfer to bobtail from storage tanks); *id.* at 255a (assuming a 7.5 gallon spill where bobtail truck was washed out); *id.* at 256a (spills "of a quart or less occurred as a result of checking filters on D-D rigs"). The estimates as to non-Shell controlled spills of D-D are flawed in other ways as well. For example, for non-Shell controlled spills from bobtail washing, the district court "assumed that the bobtails were washed

out 70% of the time." Pet. App. 255a. There is no record evidence for the 70% figure. To the contrary, the testimony of a B&B field serviceman (Merryman) suggests that the figure is far lower—resulting in an overestimate of the amount of D-D spilled in non-Shell controlled deliveries and thus underestimating Shell's liability. J.A. 130-133.

b. The court's simplistic calculation also assumes that every gallon of D-D spilled would lead to the same amount of contamination in the subsurface. But that ignores the reality that spill impacts could vary considerably depending on various variables, such as the porosity of the spill site and timing in relation to rainfall or other water events. See Pet. App. 248a (acknowledging that even a "small spill of 1,2-DCP [D-D] could cause substantial groundwater contamination"); see also pp. 47-48, *supra*. For example, the district court's analysis ignores the lining of the sump (one of the sources of contamination) in 1979, where the bobtail trucks were washed out. See Pet. App. 95a ("the sump near the B&B wash rack was lined in 1979"). Rather than account for the much lesser likelihood of groundwater contamination from such non-Shell-controlled activities after 1979, the district court applied the same assumption that every gallon of D-D spilled would result in the same amount of contamination—thereby underestimating the percentage of D-D contamination attributable to Shell-controlled deliveries.

In sum, the district court's decision to proceed with an "equitable apportionment" on the sparse record left by petitioners resulted in several critically flawed assumptions. Those assumptions, taken together, do not comprise a reasonable basis for apportioning the harm in this case.

CONCLUSION

The judgment of the court of appeals should be affirmed.

Respectfully submitted.

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DECEMBER 2008

APPENDIX

1. 42 U.S.C. 9601(29) provides:

The terms "disposal", "hazardous waste", and "treatment" shall have the meaning provided in section 1004 of the Solid Waste Disposal Act [42 U.S.C. 6903].

2. 42 U.S.C. 6903(3) provides:

The term "disposal" means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.

3. 42 U.S.C. 9607 provides in pertinent part:

Liability

(a) Covered persons; scope; recoverable costs and damages; interest rate; "comparable maturity" date

Notwithstanding any other provision or rule of law, and subject only to the defenses set forth in subsection (b) of this section—

(1) the owner and operator of a vessel or a facility,

(2) any person who at the time of disposal of any hazardous substance owned or operated any facility at which such hazardous substances were disposed of,

(3) any person who by contract, agreement, or otherwise arranged for disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous substances owned or possessed by such person, by any other party or entity, at any facility or incineration vessel owned or operated by another party or entity and containing such hazardous substances, and

(4) any person who accepts or accepted any hazardous substances for transport to disposal or treatment facilities, incineration vessels or sites selected by such person, from which there is a release, or a threatened release which causes the incurrence of response costs, of a hazardous substance, shall be liable for—

(A) all costs of removal or remedial action incurred by the United States Government or a State or an Indian tribe not inconsistent with the national contingency plan;

(B) any other necessary costs of response incurred by any other person consistent with the national contingency plan;

(C) damages for injury to, destruction of, or loss of natural resources, including the reasonable costs of assessing such injury, destruction, or loss resulting from such a release; and

(D) the costs of any health assessment or health effects study carried out under section 9604(i) of this title.

The amounts recoverable in an action under this section shall include interest on the amounts recoverable under

subparagraphs (A) through (D). Such interest shall accrue from the later of (i) the date payment of a specified amount is demanded in writing, or (ii) the date of the expenditure concerned. The rate of interest on the outstanding unpaid balance of the amounts recoverable under this section shall be the same rate as is specified for interest on investments of the Hazardous Substance Superfund established under subchapter A of chapter 98 of Title 26. For purposes of applying such amendments to interest under this subsection, the term "comparable maturity" shall be determined with reference to the date on which interest accruing under this subsection commences.

(b) Defenses

There shall be no liability under subsection (a) of this section for a person otherwise liable who can establish by a preponderance of the evidence that the release or threat of release of a hazardous substance and the damages resulting therefrom were caused solely by—

(1) an act of God;

(2) an act of war;

(3) an act or omission of a third party other than an employee or agent of the defendant, or than one whose act or omission occurs in connection with a contractual relationship, existing directly or indirectly, with the defendant (except where the sole contractual arrangement arises from a published tariff and acceptance for carriage by a common carrier by rail), if the defendant establishes by a preponderance of the evidence that (a) he exercised due care with respect to the hazardous substance con-

cerned, taking into consideration the characteristics of such hazardous substance, in light of all relevant facts and circumstances, and (b) he took precautions against foreseeable acts or omissions of any such third party and the consequences that could foreseeably result from such acts or omissions; or

(4) any combination of the foregoing paragraphs.

* * * * *

4. 42 U.S.C. 9613(f)(1) provides:

Contribution

(1) Contribution

Any person may seek contribution from any other person who is liable or potentially liable under section 9607(a) of this title, during or following any civil action under section 9606 of this title or under section 9607(a) of this title. Such claims shall be brought in accordance with this section and the Federal Rules of Civil Procedure, and shall be governed by Federal law. In resolving contribution claims, the court may allocate response costs among liable parties using such equitable factors as the court determines are appropriate. Nothing in this subsection shall diminish the right of any person to bring an action for contribution in the absence of a civil action under section 9606 of this title or section 9607 of this title.

* * * * *

RESPONDENT'S BRIEF

Nos. 07-1601 and 07-1607

SUPREME COURT U.S.
FILED
DEC 22 2008
OFFICE OF THE CLERK

In The Supreme Court of the United States

BURLINGTON NORTHERN & SANTA FE RAILWAY COMPANY, UNION PACIFIC RAILROAD COMPANY,

Petitioners,

v.

UNITED STATES OF AMERICA, et al.

SHELL OIL COMPANY,

Petitioner,

v.

UNITED STATES OF AMERICA, et al.

On Writs Of Certiorari To The United States Court Of Appeals For The Ninth Circuit

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QUESTIONS PRESENTED

1. Whether the court of appeals correctly affirmed the district court's determination that petitioner Shell Oil Company is liable under Section 107(a)(3), 42 U.S.C. § 9607(a)(3), of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"), 42 U.S.C. § 9601 *et seq.*, as an entity that arranged for disposal of hazardous substances.

2. Whether the court of appeals properly held petitioners Shell Oil Company and The Burlington Northern and Santa Fe Railway Company and Union Pacific Railroad Company jointly and severally liable under CERCLA for the response costs of the United States and California governments, based on the court's determination that neither petitioner satisfied its evidentiary burden of providing a reasonable basis to apportion liability.

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STATEMENT

The Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") authorizes states and the United States to take prompt action to protect the public and the environment from the harm caused by the release or threatened release of hazardous substances into the environment. Rather than requiring that costs associated with these actions be borne by the government and ultimately the taxpayers, CERCLA authorizes states and the United States to recover their cleanup expenses from the parties responsible for the contamination.

As of March 31, 1998, the Department of Toxic Substances Control of the State of California ("California") had expended more than $400,000 to clean up hazardous substances in the soil and ground water at a former agricultural chemical storage and distribution facility in Arvin, California, and the United States Environmental Protection Agency had spent significantly more. (Pet. App. at 158a-59a, 230a-31a.)[1] The operator of the facility, Brown and Bryant, Inc. ("Brown and Bryant"), is now insolvent and defunct. The governments brought cost-recovery actions pursuant to CERCLA Section 107(a), 42 U.S.C. § 9607(a) against The Burlington Northern and Santa Fe Railway Company, and Union Pacific Railroad

[1] Unless otherwise noted, all references to "Pet. App." are to the appendix in the petition for a writ of certiorari filed by petitioners The Burlington Northern and Santa Fe Railway Company and Union Pacific Railroad Company.

Company ("Railroads"), which owned the western portion of the facility during a period when releases occurred, and Shell Oil Company ("Shell"), which sold and arranged for the shipment of large quantities of chemicals that, as Shell was well aware, were routinely spilled during delivery at the facility. After a bench trial, the district court found the Railroads strictly liable under CERCLA as owners of the facility at the time of disposal (Pet. App. 187a) and Shell strictly liable as having arranged for the disposal of hazardous substance. (*Id.* at 213a.)

The district court declined to impose joint and several liability on the Railroads or on Shell, though it noted that as a result of their "'scorched earth,' all-or-nothing approach to liability," neither "offered helpful arguments to apportion liability." (*Id.* at 236a.) Instead, the court "independently" created a set of calculations based on a series of assumptions, assigning 9% liability to the Railroads and 6% liability to Shell, leaving the governments to bear 85% of their cleanup costs. (*Id.* at 237a, 252a, 256a.)

The court of appeals affirmed in part, holding that Shell was strictly liable as an "arranger" due to its control over, and knowledge of, the chemical transfer process and resulting disposal through leaking and spilling, and reversed in part, holding that the Railroads and Shell did not establish sufficient facts to support apportionment and therefore were jointly and severally liable. (Pet. App. 1a-57a.)

1. Congress enacted CERCLA in 1980 in response to the serious environmental and health dangers posed by property contaminated by hazardous substances. *United States v. Bestfoods*, 524 U.S. 51, 55 (1998). The two goals of CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986 ("SARA"), Pub. L. No. 99-499, 100 Stat. 1613, are "to provide for clean-up if a hazardous substance is released into the environment or if such release is threatened" and "to hold responsible parties liable for the costs of these clean-ups." H.R. Rep. No. 253, 99th Cong., 1st Sess., pt. 3, at 15 (1985). Congress broadly defined the categories of parties potentially liable for the cost of such cleanups. "'The remedy that Congress felt it needed in CERCLA is sweeping: *everyone* who is potentially responsible for hazardous-waste contamination may be forced to contribute to the costs of cleanup.'" *Bestfoods*, 524 U.S. at 56 n.1 (quoting *Pennsylvania v. Union Gas Co.*, 491 U.S. 1, 21 (1989) (plurality opinion.)).

California, through its Department of Toxic Substances Control,[2] is authorized to clean up sites

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[2] The Department of Toxic Substances Control ("DTSC") is an environmental enforcement agency of the State of California authorized under the California Hazardous Substance Account Act to respond to the release or threatened release of hazardous substances and to imminent or substantial endangerments to the public health, safety or the environment (*see* California Health and Safety Code §§ 25300 *et seq.*), and to recover costs expended on such activities under state or federal law. Cal. Health & Saf. Code §§ 25358.3, 25360; Cal. Health & Saf.

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contaminated by hazardous substances. *See* 42 U.S.C. § 9604(d). California may then recover its response costs from responsible parties through an action under CERCLA Section 107(a), 42 U.S.C. § 9607(a).

To establish a prima facie case under CERCLA for recovery of its costs, California must establish four elements: (1) a "release or threatened release" (2) of a "hazardous substance" (3) from a "facility" (4) which "causes the incurrence of response costs." 42 U.S.C. § 9607(a)(4). California must then establish that a defendant falls within at least one of the four enumerated classes of responsible parties: (1) the owner and operator of a facility, (2) the owner or operator of a facility at the time of any disposal of a hazardous substance, (3) any person who arranged for the disposal or treatment of hazardous substances, or (4) any person who accepts any hazardous substances for transport to disposal or treatment facilities. 42 U.S.C. § 9607(a). Except for narrow defenses specifically defined at 42 U.S.C. § 9607(b), responsible parties are strictly liable for all response costs incurred by the federal or state government that are not inconsistent with the national contingency plan. 42 U.S.C. § 9607(a)(4).[3]

Code § 58009, as added by Gov. Reorg. Plan No. 1 of 1991 (May 17, 1991); 42 U.S.C. § 9607(a).

[3] The national contingency plan, which specifies procedures for preparing and responding to contamination, is codified at 40 C.F.R. pt. 300.

Courts of appeals consistently have held that CERCLA liability is joint and several, except where a responsible party can prove that the harm is divisible. *See, e.g.*, *Fireman's Fund Ins. Co. v. City of Lodi*, 302 F.3d 928, 945 (9th Cir. 2002); *Chem-Nuclear Systems, Inc. v. Bush*, 292 F.3d 254, 260 (D.C. Cir. 2002); *Carson Harbor Village, Ltd. v. Unocal Corp.*, 270 F.3d 863, 871 (9th Cir. 2001); *United States v. Hercules, Inc.*, 247 F.3d 706, 717 (8th Cir. 2001); *United States v. Township of Brighton*, 153 F.3d 307, 318 (6th Cir. 1998); *United States v. Alcan Aluminum Corp.*, 990 F.2d 711, 721-22 (2d Cir. 1993); *United States v. Kayser-Roth Corp.*, 910 F.2d 24, 26 (1st Cir. 1990); *United States v. Monsanto Co.*, 858 F.2d 160, 167, 171-72 (4th Cir. 1988).

In analyzing divisibility of harm in CERCLA Section 107(a) actions, the lower courts have followed the Restatement (Second) of Torts, which provides that damages may be apportioned amongst responsible parties where a party establishes either distinct harms or divisibility resting on a "reasonable basis for determining the contribution of each cause to a single harm." Restatement (Second) of Torts § 433A; *see, e.g.*, *Monsanto*, 858 F.2d at 171-72; *In re Bell Petroleum Servs.*, 3 F.3d 889, 895-97 (5th Cir. 1993); *Brighton*, 153 F.3d at 318; *Hercules*, 247 F.3d at 717. Responsible parties have the burden of demonstrating divisibility by evidence that is "concrete and specific." *Hercules*, 247 F.3d at 717-18. When responsible parties cannot prove distinct harms or divisibility, joint and several liability governs, and each party

is liable for the full amount of the costs incurred. *Chem-Nuclear*, 292 F.3d at 260-61; *Monsanto*, 858 F.2d at 172-73; *Hercules*, 247 F.3d at 717-19.

At the liability stage, apportionment of responsible parties' liability to the government for environmental cleanup costs must be based on proof of divisibility of harm; equitable considerations are relevant only in the contribution stage where a court may allocate damages amongst parties held responsible for the contamination. Parties subject to joint and several liability for reimbursement of cleanup costs may seek contribution from other responsible parties under Section 113 of CERCLA, 42 U.S.C. § 9613. Contribution is available to parties that have resolved their liability to the United States or a state or that have been sued under Section 106 or 107 of CERCLA, 42 U.S.C. §§ 9606, 9607. 42 U.S.C. § 9613(f)(3)(B); *Cooper Industries, Inc. v. Aviall Services, Inc.*, 543 U.S. 157, 165-66 (2004). In any contribution phase of litigation, which involves allocation only amongst responsible parties, the courts consistently have held that equitable considerations may be taken into account. 42 U.S.C. § 9613(f)(1) (in contribution action, court may allocate response costs among liable parties using equitable factors that court determines are appropriate); *see Hercules*, 247 F.3d at 718; *Brighton*, 153 F.3d at 318-19; *Bell Petroleum*, 3 F.3d at 901. Considerations of fairness as between responsible parties are not, however, proper at the liability stage. *See United States v. Rohm & Haas Co.*, 2 F.3d 1265, 1280-81 (3d Cir. 1993), *overruled on*

other grounds by United States v. E.I. DuPont De Nemours & Co., 432 F.3d 161, 162-63 (3d Cir. 2005) (en banc); *United States v. Alcan Aluminum Corp.*, 964 F.2d 252, 270 n.29 (3d Cir. 1992).

2. In 1960, Brown and Bryant commenced operation of an agricultural chemical storage and distribution business on a 3.8-acre parcel (the "B&B parcel"). (Pet. App. 85a.) In 1975, Brown and Bryant expanded its operations by leasing a 0.9-acre parcel owned by the Railroads that adjoined the B&B parcel to the west (the "Railroad parcel"). (*Id.*) Brown and Bryant ceased operating the facility in 1988 or 1989; the company is now insolvent. (*Id.* at 83a-84a, 129a.)

The Brown and Bryant facility stored and distributed numerous chemicals, including the Shell products D-D and Nemagon (soil fumigants containing hazardous substances), and non-Shell products, including various pesticides and the weed killer dinoseb. (Pet. App. 88a.) During their transfer and storage, and in the course of maintaining and cleaning out equipment, hazardous chemicals routinely spilled and leaked onto both parcels. (*Id.* at 92a-96a.) Brown and Bryant "used the leased [Railroad] parcel as part of its total agricultural chemical operations." (*Id.* at 86a.) Spills and leaks on the Railroad parcel occurred when, for example, gauges on D-D rig tanks broke (which they "regularly" did when a hard wind blew), causing "the contents of a half-filled tank" to "slowly spill on the ground" (*id.* at 91a-92a); employees rinsed out mobile "nurse" tanks or checked their filters, or the nurse gauges broke (*id.* at 92a); employees

transferred D-D to two-ton "bobtail" trucks (*id.* at 93a); employees washed chemicals off the warehouse apron and hosed out the warehouse (*id.* at 94a); and drums of stored material leaked to the ground. (*Id.* at 95a.) Wherever it was located, "the corrosive D-D caused rubber seals on pumps and valves to fail suddenly and unexpectedly, causing big leaks." (*Id.* at 115a.) Spill and leaks on the B&B parcel occurred in similar ways (*see, e.g., id.* at 92a, 111a (rinsing out "nurse" tanks on a "wash rack")) and, in addition, in the process of delivering chemicals (described below). (*Id.* at 119a-24a.)

The B&B parcel was graded toward a pond located in the southeast portion of the site. (*Id.* at 95a.) A pipe allowed the water on the Railroad parcel also to drain to the pond. Over the course of the facility's operation, spills and leaks created a single plume of ground water contaminated by hazardous substances that threatened municipal drinking water supplies. (*Id.* at 145a-46a; 174a; 237a-38a; 245a-46a.)

3. To protect public health and the environment, the California and federal governments began to clean up the contamination at the facility pursuant to their authority under CERCLA and, in so doing, incurred substantial remediation costs at the site. (*Id.* at 229a-231a.) The governments filed suit against Brown and Bryant, the Railroads, and Shell seeking reimbursement of investigation and cleanup costs pursuant to CERCLA Section 107(a), 42 U.S.C. § 9607(a). In 2003, after a bench trial, the district

court issued its Amended Findings of Fact and Conclusions of Law. (*Id.* at 82a-262a.)

a. The district court held that the government plaintiffs established a prima facie case of CERCLA liability against both the Railroads and Shell. (*Id.* at 176a-83a (Railroads); *id.* at 208a-19a (Shell).) The court determined that the "entire Arvin plant (both parcels)" constituted a single "facility," and Brown and Bryant's operations released hazardous substances to the environment throughout the facility. (*Id.* at 172a-74a.) According to the district court, there was evidence of contamination relating to both parcels. (*Id.* at 174a.) The court found that the pond, a sump on the B&B parcel that was connected to the pond, and a dinoseb spill area on the B&B parcel "were and are the primary sources of the ground water contamination at the Site." (*Id.* at 104a, *see also id.* at 251a.) The court further found, however, that "[i]t is not within the realm of science to quantify the contribution from the Railroad parcel over the ground surface or through focused infiltration that has reached the ground water under the Site" and that the contamination for each parcel could not be exactly quantified. (*Id.* at 112a.) Accordingly, the district court found that the resulting ground water plume "poses an indivisible threat of leaching and diffusing contaminants to lower groundwater suitable for drinking." (*Id.* at 172a; *see id.* at 174a.)

The district court held that the Railroads were liable under CERCLA as owners of a facility at the time of disposal of hazardous substances, (*id.* at 176a-83a); *see* CERCLA § 107(a)(2), 42 U.S.C. § 9607(a)(2), and that Shell was liable as a party that had "arrange[d] for disposal" of hazardous substances, noting that "disposal" under CERCLA includes any leaking or spilling of a hazardous substance. (*Id.* at 208a-19a); *see* CERCLA § 107(a)(3), 42 U.S.C. § 9607(a)(3).

The district court found that Shell had the authority under the conditions of sale to determine the means and methods of delivery and unloading of the D-D, that Shell "was an active participant in the D-D shipment, delivery and receiving process at Arvin with knowledge that spills and leaks of hazardous D-D were inherent and inevitable," and that such spills and leaks "occurred throughout the period Shell sold D-D" to Brown and Bryant. (*Id.* at 204a.) The district court noted that in the early 1960s Shell began to require its distributors, including Brown and Bryant, to cease buying D-D in barrels and purchase in bulk in order to ensure that they had adequate supplies of the chemicals on hand. (*Id.* at 115a.) The "bulk storage prescribed by Shell . . . was intended to and did economically benefit Shell." (*Id.*) The bulk purchase of the chemicals required Brown and Bryant to maintain large storage tanks and necessitated the use of hoses to transfer the chemicals from the delivery trucks to the tanks. (*Id.* at 119a-24a.) Shell determined and arranged for the means and methods of

delivery to the site, including hiring tanker trucks; Shell required the trucks to have specific equipment for unloading the chemical. (*Id.* at 114a-15a, 120a, 123a.) Shell owned the chemicals at the time it made these arrangements. (*Id.* at 124a-25a, 211a.) For most of the relevant time period, the trucking companies that were contracted by Shell performed the actual unloading of chemicals, rather than Brown and Bryant personnel. (*Id.* at 208a-09a.) It was only after 20 years, in the early 1980s that Shell directed that the unloading should be done by Brown and Bryant employees. (*Id.* at 209a.) Shell specified the procedures for unloading the chemical from the trucks and for storing the chemicals at the site. (*Id.* at 208a-09a.)

In transferring the D-D from truck to tank, the transporter placed a bucket under the hose connection. (*Id.* at 119a.) When the transfer was complete, the transporter would drain the hoses into a bucket and the contents would be dumped either into a Brown and Bryant tank maintained for "dregs" or back into the tanker truck. (*Id.* at 120a.) Spills often occurred during this process. (*Id.* at 119a-20a.) At times, the hoses overflowed the buckets, the buckets tipped over, or the hose would be tossed on the ground and residual material would drain from the hose. (*Id.* at 121a.) Further, feeding the hose into the trucks' hose tubes would cause leaks onto the ground. (*Id.*) The court found that "spills were inherent in the delivery process that Shell arranged, and always

occurred, in differing degrees of magnitude." (*Id.* at 119a; *see id.* at 209a.)

Shell knew that spills routinely occurred during the process it prescribed, and therefore reduced the purchase price of the chemical D-D in an amount, the district court concluded, that was linked to such loss. (*Id.* at 122a-24a.) "However characterized, there was a monetary allowance to Brown and Bryant for product Shell expected to be lost in the process of delivery and storage." (*Id.* at 122a.) In addition, the district court noted the control that Shell asserted throughout the delivery process. For instance, if it was determined that the facility was inadequately maintained for receiving and storing the D-D, by contract Shell had the right to require the truck to return to the terminal; the court held that under these circumstances, legal title would not pass to Brown and Bryant, but would remain with Shell. (*Id.* at 211a-12a.)

b. Having found the Railroads and Shell liable, the district court next addressed whether each should be held jointly and severally liable for the governments' response costs, noting "each defendant bears the burden of proof on apportionment." (*Id.* at 232a.) As a result of the Railroads' and Shell's decision to deny all liability, the court found that "no party has specifically documented the relative contributions of contamination from either parcel" (*id.* at 248a), and that there is "no evidence to quantify the difference in volume of the releases" from the Railroad and Brown and Bryant parcels. (*Id.* at 252a.)

The district court expressed frustration at the lack of evidence addressing divisibility of harm, noting the Railroads' and Shell's "scorched earth," all-or-nothing approach to liability. (*Id.* at 236a.) It observed that neither the Railroads nor Shell "offered helpful arguments to apportion liability" (*id.*), and that they "effectively abdicated providing any helpful arguments to the court." (*Id.* at 236a-37a.) Rather than holding the Railroads and Shell jointly and severally liable as a result of their having failed to carry their burden, the district court instead held that the Railroads' and Shell's failure of proof "left the court to independently perform the equitable apportionment analysis demanded by the circumstances of the case." (*Id.* at 236a-37a.)

As authority for conducting an "equitable apportionment," the court cited CERCLA Section 113(f)(1), 42 U.S.C. § 9613(f)(1), which governs allocation of damages as amongst liable parties in a contribution action. (*Id.* at 239a.) The court prefaced its inquiry with the observation that the "contribution from the Railroad parcel" to the "indivisible" plume was "incalculable." (*Id.* at 237a-38a.) The court nonetheless created a multi-part equation by which, in its view, the Railroads' "several liability may be roughly calculated." (*Id.* at 251a.)

First, the court noted that the surface area of the Railroad parcel was 19% of the total site surface. (*Id.*) Second, it noted that the Railroads' 13-year lease to Brown and Bryant constituted 45% of the site's total 29 years of operation. (*Id.*) The court next observed

that Nemagon and dinoseb were stored on the Railroad parcel, and summarily concluded that these two chemicals, "contributed to ⅔ of overall Site contamination." (*Id.*) The district court acknowledged that "[t]here is no evidence to quantify the difference in volume of the releases" but concluded that "based on the considerable evidence of the relative levels of activity and number of releases on the two parcels, the Railroad parcel could not have contributed to more than 10% of the volume or mass of the overall site contamination resulting from Brown and Bryant's hazardous substance-release producing activities as the sole site operator and owner of over 80% of the site." (*Id.* at 252a.) The court then multiplied the three percentages, stating that "if 19% is multiplied by 0.45 (13 years of storage on Railroad parcel use/28 years of [Brown and Bryant] operations) and multiplied by ⅔ (dinoseb and Nemagon contamination) the relative figure of 6% is reached." (*Id.*) Finally, the court adjusted the Railroads' liability, "[a]llowing for calculation errors up to 50%," to 9%. (*Id.*)

Turning to Shell, the district court first acknowledged that "Shell did not present evidence how its products' contribution to the contamination at the Arvin facility can be apportioned." (*Id.* at 252a.) The court nonetheless attempted to "roughly calculate" (*id.* at 253a) the amount of D-D spilled during the 23 years of Shell-controlled deliveries. (*Id.* at 253a-57a.) The starting point of the calculation was the amount of D-D that Shell sold to Brown and Bryant during that time period. (*Id.* at 253a, 89a-90a.) The record

contained sales data only for six years. (*Id.*) For one of those years, the total gallons sold were substantially less than the other five, causing the court to conclude that that year was "statistically aberrational." (*Id.* at 253a.) Based on the remaining five years of sales data, the court assumed that for each of the 23 years, delivery trucks arrived at the site with an average of 122,390 gallons. (*Id.* at 254a.) The court further assumed transport by 4,500 gallon trucks, yielding 27 delivery loads of D-D per year. (*Id.*) The court then assumed a typical spill scenario at delivery of three gallons per load, yielding 81 gallons spilled at delivery (27 x 3) and 122,309 gallons being placed into bulk storage (122,390 - 81) each year. (*Id.*) Over the 23-year period, based on the court's assumptions, 1,863 gallons were spilled at delivery. (*Id.*)

The court then created a series of spill assumptions for each stage of operations at the Brown and Bryant facility, including the transfer of D-D from bulk storage to bobtail trucks, D-D rigs, and nurse tanks; washing of bobtails; checking of nurse tank filters; rinsing of nurse tanks; and checking filters on D-D rigs. (*Id.* at 254a-56a.) At each step, the court made assumptions about equipment capacity, average size of spills, and regularity of cleaning and maintenance. (*Id.* at 254a-56a.) Dividing 1,863 gallons (the assumed D-D spills at delivery) by 31,212 (the total assumed D-D spills), the court concluded that Shell was responsible for approximately 6% of the spills at the facility, and therefore should be severally liable for 6% of the total site response costs.

(*Id.* at 256a-57a.) The district court made no findings linking this assumed spill volume to the soil or ground water contamination at the site.

The district court found Brown and Bryant jointly and severally liable. However, Brown and Bryant is insolvent; the defunct company cannot contribute to the governments' cleanup costs. (*Id.* at 129a and 241a.)

4. Shell appealed the district court's holding that it was liable as an "arranger" under CERCLA. (*Id.* at 11a-12a.) The governments appealed the district court's apportioning of liability to Shell and the Railroads and its rejection of joint and several liability. (*Id.* at 11a.) The governments asserted on appeal that joint and several liability should have been imposed on Shell and the Railroads because they had not presented sufficient evidence at trial to justify the apportionment of liability. (*Id.* at 11a-17a.) The court of appeals affirmed in part and reversed in part. (*Id.* at 1a-57a.)

a. The court of appeals affirmed the district court's ruling that Shell is a liable party under CERCLA as one that "arranged for disposal" of hazardous substances. (*Id.* at 47a-55a.) The court observed that "arranger" liability extends not only to direct arrangements for disposal of hazardous substances, but also to arrangements in which such disposal is a foreseeable byproduct of, but not the purpose of, the transaction. (*Id.* at 48a-50a.) The court also noted that CERCLA's definition of "disposal"

includes the processes of "spilling" and "leaking." (*Id.* at 50a-51a.) The court of appeals noted that the district court had focused on several aspects of Shell's involvement with the Brown and Bryant site. These included: the frequency of spills at the site; Shell's arrangement of delivery and choice of carrier; Shell's encouragement of the bulk delivery method, which necessitated transfers of large quantities of chemicals causing spills and corrosion leaks; and Shell's purchase price rebate that the district court found "was linked to loss from leakage." (*Id.* at 53a-54a.) Consequently, the court of appeals held that Shell "had sufficient control over, and knowledge of, the transfer process to be considered an 'arranger'" under CERCLA. (*Id.* at 55a.)

b. The court of appeals reversed the district court's determination of divisibility and held Shell and the Railroads jointly and severally liable. (*Id.* at 19a-47a.) The court held that while liability under CERCLA generally is joint and several, "[i]n line with every circuit that has addressed the issue . . . apportionment is available at the liability stage" under appropriate circumstances. (*Id.* at 20a-21a.) The court next addressed whether the particular harm at issue is, by its nature, too unified for apportionment – that is, whether, as a matter of law, apportionment would be unavailable based on the facts of this case. (*Id.* at 36a.) Reviewing this question de novo, it agreed with the district court that the harm was capable of apportionment. (*Id.* at 36a.)

The court of appeals relied on the apportionment analysis of Restatement (Second) of Torts Section 433A (Pet. App. at 22a-26a), which provides that damages may be apportioned where there are distinct harms or where there is a "reasonable basis for determining the contribution of each cause to a single harm." Restatement (Second) of Torts § 433A(1)(b). The court held that equitable considerations are not appropriate for purposes of apportioning liability among responsible parties at the liability stage. (Pet. App. at 30a-34a.)

With respect to the Railroads, it held that the district court's apportionment calculation, based solely on percentage of land area, duration of ownership, and leakage volumes, lacked a reasonable basis in the record. (*Id.* at 37a-44a.) The court of appeals also held that the district court erred in assigning a ⅔ fraction to represent the types of hazardous substances on the Railroad parcel because all three chemicals (D-D, Nemagon and dinoseb) were on the Railroad parcel at some time. (*Id.* at 42a.)

With respect to Shell, the court of appeals held that the evidence produced at trial was insufficient to determine Shell's proportional share of the site contamination. (*Id.* at 44a-47a.) The court held that the evidence did not provide a reasonable basis to sustain the district court's conclusions because the site was contaminated with a number of chemicals, and because Shell had failed to introduce any evidence from which a court could identify the percentage of contamination that was attributable to its

leaked chemicals. The court of appeals also held that the district court's calculations for the leakage of Shell chemicals at the site were far too speculative to provide a basis for apportioning liability. (*Id.* at 45a-46a.)

Because Shell and the Railroads took an all-or-nothing approach to liability and failed to sustain their burden of proof to support an apportionment of liability, the court of appeals reversed the district court's "equitable apportionment" and imposed joint and several liability. (*Id.* at 47a.)

Shell and the Railroads petitioned for rehearing en banc. Eight judges dissented from the order denying rehearing. (*Id.* at 57a.) The dissenting judges were of the view that the court's decision placed arranger liability on Shell as a "mere seller." (*Id.* at 60a-61a.) The dissent agreed that the Restatement test should apply to apportionment of liability, but opined that the court of appeals applied the test in an overly stringent manner and characterized the district court's apportionment calculations as "meticulous." (*Id.* at 60a.)

SUMMARY OF ARGUMENT

In the wake of the environmental disaster at Love Canal, Congress created CERCLA and its very

expansive liability scheme.[4] Unequivocally, Congress intended that hazardous contamination be remediated and that the costs be borne by responsible parties. This case raises two straightforward issues concerning CERCLA liability – the scope of arranger liability and the availability of apportionment in the absence of evidence of divisibility of harm based on considerations of equity.

It is well established that "arranger liability" under CERCLA is not limited to situations where the defendant has entered into a contract that focuses on the disposal of hazardous substances, such as the disposal of spent product or contaminated drums. While California and Shell agree that arranger liability does not apply to entities that merely sell or ship product containing hazardous substances that are eventually disposed of through the attenuated actions of the recipient, under CERCLA, "disposal" includes the spilling and leaking of hazardous substances to the environment. Arranger liability includes actions that go well beyond merely sending away hazardous waste with the specific intention that it be dumped. *See, e.g., United States v. Shell Oil Co.*, 294 F.3d 1045, 1054-55 (9th Cir. 2002); *Florida Power & Light Co. v. Allis Chalmers Corp.*, 893 F.2d 1313, 1318 (11th Cir. 1990); *Mathews v. Dow Chemical*

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[4] *See Metro. Water Reclamation Dist. of Greater Chicago v. North American Galvanizing & Coatings, Inc.*, 473 F.3d 824, 826-27 (7th Cir. 2007); *United States v. Bestfoods*, 524 U.S. 51, 55 (1998).

Co., 947 F. Supp. 1517, 1519-20 (D. Colo. 1996); *Courtaulds Aerospace, Inc. v. Huffman*, 826 F. Supp. 345, 347-48, 353-54 (E.D. Cal. 1993).

In this case, Shell's arrangement with Brown and Bryant led to, and resulted in, spilling and leaking of agricultural chemicals at the facility. Shell knew that leaks and spills of the chemicals were inherent in its prescribed procedures, (Pet. App. 209a) – so much so that it gave the facility credit for product lost in delivery and storage. (*See id.* at 122a.) Shell, in effect, charged Brown and Bryant only for the chemicals that were actually placed into Brown and Bryant's tanks and not for chemicals spilled in delivery.

As determined by the trier of fact, and fully supported by the record in this case, Shell arranged for and controlled the transportation and delivery of hazardous substances to the Brown and Bryant facility with the expectation that a portion of the hazardous substances routinely would be spilled (and therefore disposed of) onto the ground in the course of the transactions. Under CERCLA's broad scope, Shell's actions constitute arranger liability even though disposal was not the central focus of the transaction.

Shell, held liable as an arranger, and the Railroads, held liable as owners at the time of disposal, bear the burden of establishing a basis for apportionment of harm in order to avoid joint and several liability. Neither met its burden in this case.

There is no dispute that if adequate information is available, divisibility may be established by relevant geographic, volumetric, or chronological evidence. (Pet. App. 24a.) *See Hercules*, 247 F.3d at 719; *Bell Petroleum*, 3 F.3d at 895-96; *United States v. Township of Brighton* ("*Brighton II*"), 282 F.3d 915, 919-20 (6th Cir. 2002). The court of appeals narrowly held "that, in this case, Shell and the Railroads failed to show that expert testimony and other evidence establishes a factual basis for making a reasonable estimate that will fairly apportion liability." (Pet. App. 24a (internal quotation omitted).)

There is no dispute that the harm in this case, in theory, was capable of apportionment had Shell and the Railroads elected to present evidence (e.g., expert opinion testimony based on data and on the types of assumptions that experts are authorized to make). They did not. The record below reflects Shell's and the Railroads' strategic choice to assume – as the district court and court of appeals both observed – a "scorched earth" and "all-or-nothing" approach to liability. (Pet. App. 236a, 15a.) As the district court observed, "[n]either party offered helpful arguments to apportion liability." (*Id.* at 236a.)

The district court erroneously believed that it was required sua sponte to apportion the damages, even in the absence of evidence. This led to the court's complex calculations, consisting of a series of assumptions that the court multiplied together, resulting in small fractions of liability for both Shell and the Railroads. The district court based its assumptions on

its best guesses, notwithstanding the complicated chemistry of the site, the convoluted history of disposal, the many possible pathways to contamination, and the literally dozens of open questions concerning virtually every aspect of the harm. It also believed, in error, that equity required it to divide the harm, confusing apportionment of liability to the government with allocation of damages as amongst responsible parties. The district court's unprecedented approach runs counter to the law that places the burden of proof for apportionment on parties held liable under CERCLA and allows for considerations of equity only in contribution actions as between liable parties.

On the record before this Court, Shell and the Railroads have failed to provide a reasonable basis for divisibility. As a result, both are subject to joint and several liability.

ARGUMENT

I. Shell Arranged for Disposal of a Hazardous Substance and Therefore Is a Liable Party Under CERCLA

Shell asks this Court to rewrite CERCLA to limit arranger liability to parties that possess a hazardous substance and make arrangements specifically intended to dispose of it as a hazardous waste. The plain language of CERCLA and 25 years of case law

make clear that arranger liability is not so narrowly construed.

Under CERCLA, arranger liability is a fact-intensive determination in which the court must look beyond the defendant's characterization to whether the transaction, in fact, involves an arrangement for "disposal." *See Morton Int'l v. A.E. Staley Mfg. Co.*, 343 F.3d 669, 677 (3d Cir. 2003). CERCLA defines, "disposal" to encompass not only intentional discarding, but also inadvertent or incidental leaking and spilling. *See* 42 U.S.C. § 9601(29); 42 U.S.C. § 6903(3).

As the district court determined, and the court of appeals affirmed, the record supports the findings underlying Shell's liability as an arranger. For example, Shell owned and possessed the chemical D-D at the time it arranged for delivery to Brown and Bryant; controlled the procedures for shipment, delivery, and unloading of the chemical at the Brown and Bryant site; knew that spills were an inevitable consequence of the delivery and unloading procedures and that spills were in fact occurring throughout the entire period of the sale to Brown and Bryant; knew that some portion of the chemical was being spilled before it could be transferred to Brown and Bryant's control or ownership; and even reduced the price of the shipment to account for those spills. Under these circumstances, Shell arranged for disposal of a hazardous substance.

A. Arranger Liability Under CERCLA Is Broadly Construed Based on the Facts Surrounding the Transaction

A responsible person under CERCLA includes "any person who, by contract, agreement, or otherwise arranged for disposal or treatment . . . of hazardous substances owned or possessed by such person, by any other party or entity, at any facility . . . ." 42 U.S.C. § 9607(a)(3). Although "arranged for" is not specifically defined in the statute, courts have broadly interpreted the phrase in order to effectuate CERCLA's direction that companies responsible for introducing hazardous waste into the environment bear the costs of the cleanup. *See Morton*, 343 F.3d at 676; *United States v. Aceto Agricultural Chemicals Corp.*, 872 F.2d 1373, 1380 (8th Cir. 1989). The determination of "arranger liability" is a fact-intensive inquiry that must be made in light of the totality of circumstances. *See Pneumo Abex Corp. v. High Point, Thomasville & Denton R.R.*, 142 F.3d 769, 775 (4th Cir. 1998); *South Florida Water Mgmt. Dist. v. Montalvo*, 84 F.3d 402, 407 (11th Cir. 1996); *Cadillac Fairview/Cal., Inc. v. United States*, 41 F.3d 562, 566 (9th Cir. 1994).

Courts, of course, are not bound by a defendant's characterization of the transaction as a mere sale of a useful product, and look beyond that characterization to determine whether the transaction amounts to an arrangement for treatment or disposal of a hazardous substance. *Morton*, 343 F.3d at 677; *Freeman v. Glaxo Wellcome, Inc.*, 189 F.3d 160, 164 (2d Cir. 1999); *Aceto*,

872 F.2d at 1381-82. Here, as discussed below, the district court found on the evidence that Shell's actions involved significantly more than the mere sale of a useful product; Shell knew that its actions would result in the spilling and leaking of a hazardous substance on delivery.

B. An Entity Is Liable as an Arranger When It Knows That Disposal of a Hazardous Substance Is an Inherent and Inevitable Part of the Transaction

There is no dispute that arranger liability arises when a defendant enters into a transaction in which the central purpose is to dispose of a hazardous waste. (Shell Br. 18-19); *see United States v. Shell Oil Co.*, 294 F.3d at 1054 (referring to this as "direct" arranger liability). Shell's conduct falls outside of such "direct" arranger liability.

The courts have, however, recognized that arranger liability also arises in a broader context in which disposal of hazardous wastes is not the direct purpose of the transaction. *Catellus Dev. Corp. v. United States*, 34 F.3d 748, 752-53 (9th Cir. 1994); *Aceto*, 872 F.2d at 1381; *Redwing Carriers, Inc. v. Saraland Apartments*, 94 F.3d 1489, 1512 (11th Cir. 1996); *United States v. TIC Inv. Corp.*, 68 F.3d 1082, 1088 (8th Cir. 1995). Rather, an entity with control over a process that it knows can or will result in the release of hazardous substances is an arranger. *Morton*, 343 F.3d at 676. As the Third Circuit noted,

> proof of a defendant's knowledge that hazardous waste can or will be released in the course of the process it has arranged for, provides a good reason to hold a defendant responsible because such proof demonstrates that the defendant knowingly (if not personally) contributed to the hazardous-waste contamination. Thus general knowledge that waste disposal is an inherent or inevitable part of the process arranged for by the defendant may suffice to establish liability.

Morton, 343 F.3d at 678. Thus, under CERCLA, the government need not prove a specific intent to dispose of hazardous substances as waste in order to establish arranger liability.

Arranger liability is not without limit. The courts routinely have distinguished cases where the evidence shows that the defendant sold a useful, though hazardous, product without any knowledge or control concerning the ultimate disposal of that product, *see, e.g., Freeman*, 189 F.3d at 164; *3550 Stevens Creek Associates v. Barclays Bank of California*, 915 F.2d 1355, 1362 (9th Cir. 1990); *Florida Power & Light Co. v. Allis Chalmers Corp.*, 85 F.3d 1514, 1520 (11th Cir. 1996), from those cases where the defendant knowingly set into action a chain of circumstances that led directly to disposal as an inherent part of the transaction, even though disposal was not necessarily the purpose of the transaction, *see, e.g., Aceto*, 872 F.2d at 1381; *Catellus*, 34 F.3d 752-53; *Courtaulds*, 826 F. Supp. at 353. The first set of facts gives rise to arranger liability, while the second does not.

A manufacturer that sells a useful product and knowingly loads it into a leaking tanker truck has made an arrangement that will lead inevitably to disposal of some portion of its product as a hazardous waste. Similarly, a manufacturer that establishes and controls the method of delivery of its useful product in a manner that it knows will inevitably result in some portion of the product being spilled and disposed during the transfer, has arranged for the disposal of a hazardous waste. Neither can escape liability under CERCLA simply by claiming that the purpose of the transaction was merely to sell a useful product.

C. Shell Is Liable as an Arranger Under CERCLA Because It Owned the Hazardous Substance, Arranged the Procedures for the Transfer, and Knew that Disposal on Delivery Was an Inevitable Result of Its Arrangements

Shell characterizes its actions in sending D-D to the Brown and Bryant facility as merely an innocent arrangement for the sale of a useful product. Shell's characterization is belied by the district court's detailed findings, which are supported by abundant evidence of Shell's involvement. Shell entered into transactions with Brown and Bryant knowing that large amounts of chemicals in Shell's possession ("hazardous substances" under CERCLA) would routinely spill and leak onto the ground before they were placed into Brown and Bryant's bulk tanks for use.

As the Brief for the United States discusses in detail, it is undisputed in the record that Shell was deeply involved in the delivery process. Under the contracts of sale, Shell determined and arranged for the means and methods of delivery of D-D to the site, including hiring the tanker trucks and requiring them to have specific equipment for unloading the D-D into bulk storage. (Pet. App. at 114a-15a, 119a-20a, 124a.) Shell owned the chemical at the time these arrangements were made. (*Id.* at 124a-25a, 211a.) Shell required the facility to follow certain procedures in unloading the trucks and storing the chemical on-site. (*Id.* at 208a-09a.) At one point, Shell changed the delivery process from sealed drums to bulk delivery, requiring Brown and Bryant to use large storage tanks that necessitated the transfer of the D-D with hoses and resulted in leaks from the transfer process and storage tanks. (*Id.* at 114a-15a, 119a-22a, 209a.) Shell knew that spills were inherent in the process that it dictated for transporting and unloading the chemicals (*id.* at 122a-24a), and took into account those spills by providing for a "monetary allowance to [Brown and Bryant] for product Shell expected to be lost in the process of delivery and storage." (*Id.* at 122a.)

Finally, legal title of the Shell chemical did not pass automatically to Brown and Bryant when the delivery truck entered the site. (*Id.* at 124a.) Thus, if the transporter found that Brown and Bryant's facility was not adequately maintained for receiving and storing the D-D, Shell could order the tanker

truck to return to the terminal. (*Id.* at 124a, 211a-12a.)

Under these circumstances, Shell is significantly more than a mere seller that relinquished control over its products upon delivery and before any spill occurred. This is not a case, as posited in the dissent to the denial of en banc review, in which "sellers of chemical products will be saddled with the entire clean-up cost of a facility contaminated in part with their products, even if they lacked control over the products spilled following the sale." (*Id.* at 80a.) Rather, under CERCLA's well-recognized rules of arranger liability, Shell controlled the method of delivery of its product in a manner that it knew would result – and was resulting – in spills of hazardous substances as part of the process of delivery to the buyer. Indeed, Shell even *paid* for the spilled chemicals, charging Brown and Bryant only for what did not spill. (*Id.* at 122a.)

The result here is not contrary to *Amcast Indus. Corp. v. Detrex Corp.*, 2 F.3d 746, 751 (1993), the case upon which Shell most heavily relies. In *Amcast*, a manufacturer of trichloroethylene ("TCE") sold it to a customer and delivered it either in its own trucks or by hiring a common carrier. In both cases, spills resulted from the delivery of the chemical. The Seventh Circuit held that the manufacturer was liable as the owner of a facility under CERCLA when it delivered the TCE in its own trucks, but was not liable as an arranger when it contracted with a common carrier to deliver the chemical. *Amcast*, 2 F.3d at 751.

In *Amcast*, apart from hiring the transporter, there is no suggestion that the TCE manufacturer exercised control over the method of delivery of the chemical, adjusted the price of the chemical due to spillage, or retained legal control and ownership of the chemical such that it could refuse to off-load the chemical if the facility was not adequately prepared to cooperate in the transfer and handling of the chemical. Here, the district court found that the facts demonstrate Shell's significant level of control over the delivery process and its knowledge and anticipation of spills, as well as Shell's ability to preclude the transfer process if it so chose.

The other cases relied on by Shell underscore the facts that establish Shell's arranger liability. Unlike the cases Shell cites, this case does not raise the specter of imposing arranger liability on a product manufacturer solely because there is ultimately a disposal after the product has served its useful purpose, (*see 3550 Stevens Creek*, 915 F.2d at 1362-65; *Dayton Indep. School Dist. v. United States Mineral Products, Inc.*, 906 F.2d 1059, 1065 (5th Cir. 1990); *General Electric Co. v. AAMCO Transmissions, Inc.*, 962 F.2d 281, 287-88 (2d Cir. 1992)); or on a seller for a disposal that occurs decades after sale of a useful product due to a third party's negligence, (*see Freeman*, 189 F.3d at 164); or on a seller of a facility storing a useful product where disposal occurs after deterioration of the facility, (*see AM Int'l, Inc. v. International Forging Equip. Corp.*, 982 F.2d 989, 999 (6th Cir. 1993)). Here, the disposal occurred due to

procedures controlled by the seller, before the product could even be transferred to the physical control of the buyer, and the seller had full knowledge that such disposal would occur.

In the CERCLA context, courts have long distinguished between those cases where a party has merely made a sale of a useful product (recognizing that some disposal likely will occur eventually after the product is used), and those cases where the seller has attempted to "close its eyes" to disposals that are inherent in its arrangement. *See Aceto*, 872 F.2d at 1380. Shell asks this Court to permit Shell to close its eyes to disposals of hazardous waste that were inherent in the arrangements that it made for transfer of its materials and that were well-known to it. CERCLA does not permit Shell to escape liability for the inevitable results of its own arrangements.

D. Shell's Reading of Arranger Liability Is Contrary to CERCLA's Broad Scheme

1. Arranger Liability Under CERCLA Does Not Require a Specific Intent to Dispose of Hazardous Waste

Ignoring decades of court opinions and the unequivocal intent of Congress for an expansive reading of CERCLA liability provisions, Shell contends that the statutory terminology "arranged for treatment or disposal of a hazardous substance" must be read narrowly pursuant to a dictionary definition to apply only when the defendant affirmatively intends to

dispose of a hazardous waste. (Shell Br. at 18-19.) Under Shell's reading, a manufacturer could entirely escape CERCLA liability if it sold a hazardous chemical as a useful product and knowingly loaded the chemical for delivery into a corroded and leaking tanker truck, and the truck spilled the chemical on the delivery site, as long as the manufacturer did not own the truck that spilled the substance, did not "intend to dispose of hazardous waste," and merely intended to save money by hiring a cheap transporter. This argument distorts CERCLA's purpose to hold parties responsible for the costs of remediating the contamination they cause, regardless of their specific intent. *See Aceto*, 872 F.2d at 1378-82, 1384 (arranger liability arises when spills are "inherent" in the formulation process and "waste is generated and disposed of contemporaneously with the process").

Further, taking Shell's dictionary analysis to its logical conclusion leads to an inconsistent result. Shell acknowledges that CERCLA incorporates the definition of "disposal" contained in the Solid Waste Disposal Act ("SWDA"). 42 U.S.C. § 9601(29). Under the SWDA, disposal is defined as "the discharge, deposit, injection, dumping, *spilling, leaking*, or placing . . . of any . . . hazardous waste into or on any land" so that it "may enter the environment . . . ." 42 U.S.C. § 6903(3) (emphasis added). One of the primary dictionary definitions of "leaking" is "to enter or escape through a hole, crevice, or other opening, usually by a fault or mistake." Webster's Third New International Dictionary Unabridged (2002). Similarly, "spill"

is defined as "to cause or allow to pour, splash, or fall out and be wasted, lost or scattered." *Id.* Inherent within the plain meaning of the terms "leak" and "spill," therefore, is the notion of mistake, inadvertence, or lack of intentionality. Interpreting the phrase "arrange for" narrowly, as Shell requests, creates a statutory construction problem, as it would read "spilling" and "leaking" out of the definition of arranger liability, even though Congress expressly chose to include it.

Shell argues that under the plain language of the statute, arranger liability applies only to an entity that affirmatively intends to dump waste into the environment. As the Third Circuit noted in *Morton*, 343 F.3d at 676, the "dictionary definition of 'arrange' does not shed much light on the proper scope of liability" under CERCLA. Instead, the only reasonable reading of the statutory language is that "arrange for disposal" encompasses liability for an entity that makes arrangements concerning a hazardous substance, knowing that such arrangements will lead to the leak or spill of that substance, thus resulting in the disposal of a hazardous substance before it can be used. Shell's actions satisfy this definition.

2. The Solid Waste Disposal Act's Definition of "Disposal" Does Not Limit CERCLA Arranger Liability

Shell argues that because the D-D was not a hazardous waste at the time Shell shipped it to

Brown and Bryant, it was a useful product and not a waste, and, therefore, any spill of D-D in the process of delivery cannot give rise to arranger liability. While CERCLA identifies disposal of "hazardous substances" as the basis for liability, it also incorporates the definition of "disposal" from the Solid Waste Disposal Act ("SWDA"). *See* 42 U.S.C. § 9601(29). The SWDA concerns "wastes" rather than "substances," and defines "disposal" as "the discharge, deposit, injection, dumping, spilling, leaking, or placing . . . of any hazardous waste into or on any land . . . " 42 U.S.C. § 6903(3).

Under the SWDA, waste is "any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other *discarded material* . . . ." 42 U.S.C. § 6903(27) (emphasis added). As such, a "discarded material" may begin as a useful product and become a waste upon being discarded, disposed of, thrown away, or abandoned. At the point of being discarded, it is no longer a useful product and becomes a waste. *Ass'n of Battery Recyclers, Inc. v. United States EPA,* 208 F.3d 1047, 1052 (D.C. Cir. 2000); *see also Zands v. Nelson*, 779 F. Supp. 1254, 1262 (S.D. Cal. 1991) (gasoline entering soil is no longer useful and therefore constitutes solid waste for purpose of SWDA).

Stated another way, arranger liability under CERCLA applies to hazardous substances once they are disposed of, necessarily becoming waste, and attaches when the responsible party arranges for that disposal, even though, at the time of the arrangement,

the substance has not yet become a waste. As a result, Shell's SWDA-based argument provides no exemption. The hazardous substance, Shell's D-D, was a useful product when it was in transport to Brown and Bryant, and that portion that was placed into Brown and Bryant's storage tanks continued to be useful, available for agricultural application. The D-D that spilled during delivery to the tanks, however, became a hazardous waste as defined under the SWDA as soon as it touched the ground, never having reached the storage tanks. As such, the spilling and leaking of D-D during delivery constitutes disposal of a hazardous substance under CERCLA.

II. While Liability Under CERCLA May Be Apportioned Based on Evidence of Divisibility of Harm, the Railroads and Shell Failed to Establish a Factual Basis for Apportionment

A. The Court Below Applied the Proper Standards of Review

In line with all cases that have addressed the issue, the court of appeals acknowledged that apportionment generally is available in CERCLA cases at the liability stage and, further, that the harm at issue in this case theoretically was capable of apportionment. (Pet. App. 20a-21a.) The question presented, however, is whether the Railroads and Shell "submitted evidence sufficient to establish a reasonable basis for the apportionment of liability." (*Id.* at 36a.) The court of appeals reviewed the district court's determination

consistent with the law of other circuits and the Restatement. *See, e.g., Bell Petroleum*, 3 F.3d at 896 (question whether harm is capable of apportionment is question of law; actual apportionment of damages is a question of fact); *Hercules*, 247 F.3d at 718-19; Restatement (Second) of Torts § 434 cmt. d.

The Railroads and Shell contend that the court of appeals did not apply a clear error standard in reviewing the district court's findings. (Shell Br. 49; Railroads Br. 39.) A reviewing court must, of course, defer to the fact finder's determinations on matters involving credibility. *See, e.g., Anderson v. Bessemer City*, 470 U.S. 564, 575 (1985) (factual findings entitled to substantial deference, reversed only for clear error). The court of appeals did, in fact, defer to the trial court's factual findings. It accepted, for example, the district court's determinations that the Railroads owned 19% of the site and that spills regularly occurred on delivery of D-D. The court of appeals held merely that the trial court's independent cobbling together of various anecdotal facts and unsupported assumptions to make a case for "equitable apportionment" of liability was not authorized by law. This was well within a reviewing court's role. *See United States v. Taylor*, 487 U.S. 326, 337 (1998) (where judgment constitutes application of law to facts, reviewing court must undertake more substantive scrutiny to ensure judgment is supported by legal factors); Restatement (Second) Torts § 434 cmt. d.

B. Because the Railroads and Shell Presented No Evidence on Divisibility of Harm, the Record Is Insufficient to Support a Reasonable Basis for Apportionment of Liability

1. While liability under CERCLA generally is joint and several, a responsible party may establish that liability may be apportioned consistent with the Restatement's common law principles

Under CERCLA, "[l]iability is strict and is typically joint and several." *Hercules*, 247 F.3d at 715. CERCLA does not directly address the availability of apportionment of liability. *See* 42 U.S.C. § 9607. The circuits that have addressed these questions have looked to common law principles of tort in general, and the Restatement in particular, for guidance as to when and how to impose joint and several liability under § 9607(a). *See, e.g., Aviall Servs., Inc. v. Cooper Indus., Inc.*, 312 F.3d 677, 684 (5th Cir. 2002) (holding that apportionment of CERCLA liability is matter of federal common law), *rev'd on other grounds*, *Cooper Industries, Inc. v. Aviall Services, Inc.*, 543 U.S. 157 (2004); *United States v. Burlington N. R.R. Co.*, 200 F.3d 679, 697 (10th Cir. 1999) (same); *Brighton*, 153 F.3d at 329 (same); *Monsanto Co.*, 858 F.2d at 171 (same).

Circuit court discussions of apportionment routinely start with citation to *United States v. Chem-Dyne Corp.*, 572 F. Supp. 802 (D.C. Ohio 1983). In

Chem-Dyne, the United States sued 24 defendants that had allegedly generated or transported hazardous substances located at the *Chem-Dyne* facility. Defendants sought a determination that they could not be held jointly and severally liable. *Id.* at 804. The *Chem-Dyne* court held that while express language holding CERCLA responsible parties jointly and severally liable had been removed from the final legislation, *id.* at 806, (citing 126 Cong. Rec. S14964 (Nov. 24, 1980) and 126 Cong. Rec. H11787 (Dec. 3, 1980)) this did not mean that CERCLA prohibited joint and several liability. *Id.* at 807. Rather, the court reasoned, "the term was omitted in order to have the scope of liability determined under common law principles, where a court performing a case by case evaluation of the complex factual scenarios associated with multiple-generator waste sites will assess the propriety of applying joint and several liability on an individual basis." *Id.* at 808.

The *Chem-Dyne* court further held that the scope of liability should be interpreted according to a federally created uniform common law informed by the Restatement (Second) of Torts, *id.* at 809-10. Summarizing, the *Chem-Dyne* court noted:

> [W]hen two or more persons acting independently caused a distinct or single harm for which there is a reasonable basis for division according to the contribution of each, each is subject to liability only for the portion of the total harm that he has himself caused. Restatement (Second) of Torts, §§ 433A, 881

> (1976). . . . But where two or more persons cause a single and indivisible harm, each is subject to liability for the entire harm. Restatement (Second) of Torts, § 875. . . . Furthermore, where the conduct of two or more persons liable under § 9607 has combined to violate the statute, and one or more of the defendants seeks to limit his liability on the ground that the entire harm is capable of apportionment, the burden of proof as to apportionment is upon each defendant. *Id.* at § 433B. . . . These rules clearly enumerate the analysis to be undertaken when applying 42 U.S.C. § 9607 and are most likely to advance the legislative policies and objectives of the Act.

Id. at 810.

Shell and the Railroads agree with *Chem-Dyne* and the court below that the appropriate starting point for the rule of apportionment applicable to CERCLA cases is Section 433A of the Restatement (Second) of Torts. (Shell Br. 37; Railroads Br. 6; Pet. App. 24a); *see, e.g., Hercules*, 247 F.3d at 716 n.9, 717; *Bell Petroleum*, 3 F.3d at 895; *Chem-Dyne*, 572 F. Supp. at 810. Section 433A provides for the apportionment of damages where a defendant can show either (1) "distinct harms" or (2) a "reasonable basis for determining the contribution of each cause to a single harm." *Hercules*, 247 F.3d at 717 (quoting Restatement (Second) of Torts § 433A). "Damages for any other harm cannot be apportioned among two or more causes." Restatement (Second) of Torts § 433A(2).

As the *Hercules* court notes, however, the Restatement test is not a perfect fit in CERCLA cases and must be harmonized to fit that law. *Id.* "Thus, for example, although the Restatement contemplates that plaintiffs bear the burden of proving causation, in a CERCLA case, once the government has established the four essential elements of liability the burden shifts to the defendant to demonstrate, by a preponderance of the evidence, that there exists a reasonable basis for divisibility." *Hercules*, 247 F.3d at 717 (citing *Brighton*, 153 F.3d at 318 and *O'Neil v. Picillo*, 883 F.2d 176, 182 (1st Cir. 1989)).

2. Apportionment is appropriate where a responsible party can show distinct harm, successive injuries, or divisible harm, except where injustice to plaintiff will result

Because Shell and the Railroads rely in part on the examples in the Restatement where apportionment is allowed, California will reiterate those examples, and their underlying policies, and apply them to scenarios that occur in CERCLA cases.

Distinct harms. The Restatement first discusses the concept of "distinct harms"

> which, by their nature, are more capable of apportionment. If two defendants independently shoot the plaintiff at the same time, and one wounds him in the arm and the other in the leg, the ultimate result may be a badly damaged plaintiff in the hospital, but

> it is still possible, as a logical, reasonable, and practical matter, to regard the two wounds as separate injuries, and as distinct wrongs. The mere coincidence in time does not make the two wounds a single harm, or the conduct of the two defendants one tort.

Restatement (Second) of Torts § 433A cmt. b.

Where there are discrete harms flowing from discrete acts, the Restatement allows a court sizable latitude to divide those harms, notwithstanding imprecision. "There may be difficulty in the apportionment of some elements of damages, such as the pain and suffering resulting from the two wounds, or the medical expenses, but this does not mean that one defendant must be liable for the distinct harm inflicted by the other." Restatement (Second) of Torts § 433A cmt. b. For distinct harms, the common law allows for apportionment by "a rough estimate which will fairly apportion such subsidiary elements of damages." Apportionment by "rough estimate" applies only to "distinct harms" presumably on the stated policy ground that a defendant should not be held liable for a completely separate harm caused by another. *See* Restatement (Second) of Torts § 433A cmt. b.

In the CERCLA context, a defendant may show "distinct harm" by establishing, for example, relevant "geographical considerations." *Hercules*, 247 F.3d 717 (citing *Akzo Coatings, Inc. v. Aigner Corp.*, 881 F. Supp. 1202, 1210 (N.D. Ind. 1994), *clarified on reconsid.*, 909 F. Supp. 1154 (N.D. Ind. 1995) and

United States v. Broderick Investment Co., 862 F. Supp. 272, 277 (D. Colo. 1994)). Distinct harms may be shown where, for example, a site consists of discrete, non-contiguous areas of contamination, *see, e.g., Akzo Coatings*, 881 F. Supp. at 1210; *Kamb v. United States Coast Guard*, 869 F. Supp. 793, 798 (N.D. Cal. 1994), or where there are separate and distinct plumes of ground water contamination emanating from separate releases, *see Broderick*, 862 F. Supp. at 277; *see also Brighton*, 153 F.3d at 320 (remanding matter to trial court to determine if CERCLA apportionment available based on a showing that defendant's "operating activities were completely limited to a discrete and measurable section of the property, and that the releases onto or from that section represented a discrete and measurable harm"). Where the harm cannot be "fingerprinted to determine its exact source" the "distinct harms" rule is inapplicable. *Coeur D'Alene Tribe v. Asarco, Inc.*, 280 F. Supp. 2d 1094, 1120 (D. Idaho 2003) (finding no distinct harms where mine tailings from numerous operations combined over a period of years to create environmental pollution in basin).

Successive injuries. The Restatement next allows for apportionment in the case of successive injuries. It states:

> The harm inflicted may be conveniently severable in point of time. Thus if two defendants, independently operating the same plant, pollute a stream over successive periods, it is clear that each has caused a

> separate amount of harm, limited in time, and that neither has any responsibility for the harm caused by the other.

Restatement (Second) of Torts § 433A cmt. c.

In the case of a successive injury, a court is able to compare "apples to apples" because each defendant has engaged in the same activity, causing substantially the same type of harm. The case of *Bell Petroleum* is illustrative. In that case, releases of hazardous substances from a chrome plating shop over a six-year period, under the successive tenure of three different operators, contaminated a nearby aquifer. *Bell Petroleum*, 3 F.3d at 892-93. The Fifth Circuit noted that "[t]he chromium entered the ground water as the result of similar operations by three parties who operated at mutually exclusive times" and that, therefore, "it is reasonable to assume that the respective harm done by each of the defendants is proportionate to the volume of chromium-contaminated water each discharged into the environment." *Id.* at 903.

In *Bell Petroleum*, one of the defendant operators, Sequa, "introduced expert testimony regarding a volumetric approach to apportionment" by calculating the total amount of chromium that had been introduced into the environment by each of the operators, collectively and individually, in part based on electrical usage records. *Id.* at 904. Sequa also introduced evidence of chrome flake purchases during each operator's tenure, the value of the chrome-plating

done by each, summaries of sales, and various witnesses regarding the rinsing and wastewater disposal practices and the amount of chrome-plating activity conducted by each defendant operator. *Id.* at 903-04. On these facts, the Fifth Circuit held that Sequa had by expert testimony and other evidence established a factual basis for making a reasonable estimate that would fairly apportion liability. *Id.* at 903.

Divisible harm. Finally, the Restatement allows for apportionment where there is "divisible harm." This category of harms differs from "distinct harms" discussed above; these harms, "while not so clearly marked out as severable into distinct parts, are still capable of division upon a reasonable and rational basis, and of fair apportionment among the causes responsible." Restatement (Second) of Torts § 433A cmt. d. The Restatement includes the following oft-cited example of trespassing cattle:

> Thus where the cattle of two or more owners trespass upon the plaintiff's land and destroy his crop, the aggregate harm is a lost crop, but it may nevertheless be apportioned among the owners of the cattle, on the basis of the number owned by each, and the reasonable assumption that the respective harm done is proportionate to that number. Where such apportionment can be made without injustice to any of the parties, the court may require it to be made.

Restatement (Second) of Torts § 433A cmt. d. The Restatement includes a second example, more easily

applied to releases of hazardous substances: "Thus where two or more factories independently pollute a stream, the interference with the plaintiff's use of the water may be treated as divisible in terms of degree . . . ." *Id.* Unlike the "rough estimate" allowed where there are truly "distinct harms," however, the Restatement provides that liability in the case of harms that are merely "divisible" be apportioned "among the owners of the factories, on the basis of evidence of the respective quantities of pollution discharged into the stream." *Id.*

As the courts have recognized, "divisible harm" is "perhaps the most difficult type of harm to conceptualize." *Bell Petroleum*, 3 F.3d at 895. In many cases "where wastes of varying (and unknown) degrees of toxicity and migratory potential commingle," CERCLA defendants simply will be unable to prove divisibility. *O'Neil*, 883 F.2d at 178-79; *see also Chem-Nuclear*, 292 F.3d at 260 (source of at least 80 drums of hazardous waste could not prove by preponderance of the evidence that it sent no other drums to site, held joint and severally liable for cleanup of entire site). Still, a responsible party may be able to show divisible harm, even in a complex CERCLA case. For example, a defendant held liable with many others for waste sent to a site may be able to establish that the harm resulting from its waste can be distinguished based on "proof disclosing the relative toxicity, migratory potential, degree of migration, and synergistic capacities of the hazardous substances at the site." *See Alcan*, 990 F.2d at 722.

Where a defendant presents "no evidence, however, showing a relationship between waste volume, the release of hazardous substances, and the harm at the site," the defendant has not met its burden to show divisible harm. *Monsanto,* 858 F.2d at 172. In those circumstances, the default of joint and several liability must control. A court should not make an "'arbitrary apportionment for its own sake.'" *Hercules*, 247 F.3d 717 (quoting Restatement (Second) of Torts § 433A cmt. i.) As the comments to the Restatement explain, the burden of proving that the harm is capable of apportionment is placed on the defendant to avoid "injustice":

> In such a case the defendant may justly be required to assume the burden of producing that evidence [supporting apportionment], or if he is not able to do so, of bearing full responsibility. As between the proved tortfeasor who has clearly caused some harm, and the entirely innocent plaintiff, any hardship due to lack of evidence as to the extent of the harm should fall upon the former.

Restatement (Second) Torts § 433B cmt. d.[5]

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[5] In a similar vein, the Restatement notes that "[e]xceptional cases" may "arise in which injustice to the plaintiff may result" from apportionment. Restatement (Second) of Torts § 433A cmt. h.

> It may, for example, appear that one of two tortfeasors is so hopelessly insolvent that the plaintiff will never be able to collect from him the share of the damages allocated to him . . . . In such cases the application of

(Continued on following page)

3. The Railroads and Shell introduced, and the record contained, no evidence to support apportionment

In this case, the district court purported to apportion sua sponte the governments' harm – their response costs – based on various geographic, volumetric and chronological considerations. As noted above, these attributes may allow for apportionment of CERCLA response costs where they are relevant to dividing the harm, and where they are supported by evidence. In this case, however, the district court's calculations were not based on evidence showing that the harms were distinct, severable based on time, or otherwise divisible on a reasonable and rational basis. At bottom, the district court engaged in an equitable allocation, an exercise not properly part of an apportionment determination.

> the rule stated in Clause (b) would mean that the innocent plaintiff would be forced to bear the share of the loss due to the defendant from whom he could not collect the damages, and the liability of the other tortfeasor would be reduced accordingly. Nothing in this Section, or in the Comments, is intended to say that the court may not, in a case where justice requires it, refuse to apply the rule stated in Clause (b).

Id. As discussed in the Statement, the operator of the facility, Brown and Bryant, is insolvent, and the governments therefore will not be able to collect from it.

a. There is no basis in the record to apportion the Railroads' liability

The Railroads' relationship to the site does not fit neatly into any of the categories allowing apportionment set forth in the Restatement. The district court identified no distinct harms related to California's response costs, such as geographically discrete areas of contamination located in segregated areas.[6]

Rather, as the district court found, the Railroad parcel and the B&B parcel constituted one facility; the Railroad parcel was connected to the pond on the B&B parcel by a pipe, and the contaminants of concern – D-D, Nemagon and dinoseb – were released on both parcels. The resulting ground water plume was "indivisible." (*Id.* at 172a, 174a.) The district court expressly found that "[t]here is no evidence to quantify the difference in volume of the releases" from the two parcels. (*Id.* at 252a.) The court found that "[i]t is

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[6] The district court found that there was a "hot spot" of dinoseb contamination on the B&B parcel resulting from a 1983 tank leak. (Pet. App. 137a.) EPA spent $1.3 million on the "hot spot." (Pet. App. 253a.) The district court determined that Shell was not liable for any part of the response costs related to the dinoseb spill cleanup, (*id.*), a determination that the governments did not appeal. (Pet. App. at 56a-57a.) The district court did not make findings related to the dinoseb "hot spot" in ruling on the Railroads' liability. To California's knowledge, the Railroads did not argue in their petition for certiorari that the district court's failure to exclude costs related to the dinoseb "hot spot" constituted error.

not within the realm of science to quantify the contribution from the Railroad parcel over the ground surface or through focused infiltration that has reached the groundwater under the Site." (*Id.* at 112a.)

California and the United States incurred costs related to soil and ground water investigation and remediation of the entire site, including both parcels, and neither Shell nor the Railroads presented evidence at trial to divide those response costs as between the parcels. Under these circumstances, the fact that the Railroad parcel constituted 19% of the site is legally irrelevant to the harm at issue – the response costs incurred by the State and federal governments related to soil and ground water contamination. California is aware of no case where a court has apportioned liability in a CERCLA 107 action based only on the relative area of a portion of a site containing commingled contaminants and without any evidence establishing distinct harms.

Neither does this case present an example of successive liability, conveniently severable by successive site operators taking over operation of the same facility at successive points in time. Rather, it involves liability that arises from the parties' different and distinct roles at the site; their liability is not successive, but runs concurrently.

Although, as they did below, the Railroads have taken an all-or-nothing approach in their briefs to this Court, it may be argued that the Railroads'

liability should be no greater than what it would have been under a successive liability scenario. That is, if the Railroads assumed the operation of the Brown and Bryant facility for the period of the 13-year lease, they might arguably show that they should be held liable only for the contamination that occurred in those years, which constitutes 45% of the site's 29-year period of operation.

This argument is appealing, but fails for the simple reason that, unlike the defendant chrome plate shop operator in *Bell Petroleum*, the Railroads chose not to attempt to "prove up" the volumes of releases in each year of operation. The limited evidence in the record, specifically, the five years of data for the delivery of the single chemical D-D, suggest that, in fact, operations, and therefore releases, cannot be presumed to be substantially similar over the entire period of the facility's operation. (*See* Pet. App. at 89a-90a, 253a-54a.) Accordingly, the district court had no basis to apportion based on volumetric or chronological data. The Railroads suggest that Brown and Bryant took greater care in later years to reduce releases. (Railroads Pet. 45.) This qualitative observation, however, does not allow a court to make any reasonable inference about the quantity of releases that occurred in any given year, especially since it is untethered to the volume of chemicals actually delivered, stored, and distributed from the site.

Divisibility of harm, similarly, is inapplicable in this case. All chemicals, including D-D, were present and released on all parts of the site, albeit in varying volumes. As discussed in the Statement, numerous activities, including the storage of chemicals and the washing of equipment, trucks and the warehouse, took place on the Railroad parcel. The Railroads' connection to the facility flows from its lease to Brown and Bryant. Because it is impossible to characterize the activities of Brown and Bryant on the western portion of its facility as severable from those on the eastern portion, it is also impossible to sever the Railroad parcel from the B&B parcel for purposes of apportionment. Stated simply, the district court's arbitrary assignment of a value of ⅔ based on the fact that Nemagon and dinoseb were stored on the Railroad parcel – ignoring that D-D repeatedly was *spilled* on the Railroad parcel – has no rational connection to the rule of divisible harm.

The district court's error on each of these asserted bases for apportionment was compounded by the fact that the court multiplied each ungrounded factor, at each step of the faulty equation, dramatically reducing the Railroads' fractional share of liability. The court of appeals was correct to find the district court's unprecedented apportionment exercise to be clear error.

b. There is no basis in the record to apportion Shell's liability

As discussed above, to arrive at an "equitable" apportionment of harm for Shell, the district court used gross sales data for the chemical D-D available for five[7] of 23 years that Shell delivered chemicals to the site. It then used a series of court-created calculations to arrive at a ratio of D-D that spilled or leaked on delivery, as compared to D-D that spilled or leaked in all other aspects of Brown and Bryant's operations. The court calculated the percentage at 6% and apportioned liability to Shell accordingly.

As with the case relating to the Railroads, there is no evidence that the harm related to Shell's actions as an "arranger" is distinct from the other harms at the facility.[8] The hazardous constituents in the D-D spilled during delivery mixed and commingled with the D-D that spilled and leaked everywhere else throughout the Brown and Bryant facility over the long period that the facility was in operation. Nor is this a case of successive injuries involving successive operators; the spills that are related to Shell's

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[7] As discussed in the Statement, the district court chose to disregard D-D sales data for 1986 because the amount during that year (26,000 gallons), in the court's view "is so significantly less than in other years as to be statistically aberrational." (Pet. App. 253a.) Whether the five remaining years of data were aberrational when compared to the other 18 years of chemical delivery cannot be determined on the record.

[8] For a discussion of the dinoseb "hot spot," *see* footnote 6, *supra*.

delivery arrangement with Brown and Bryant occurred contemporaneously with Brown and Bryant's operation.

As with the Railroads, it is possible that Shell could have provided evidence that, at most, it should be held liable only for the years during which it arranged for delivery of chemicals – 23 of the site's 29 years of operation (79%) – but Shell chose for strategic reasons to deny all liability and not present evidence relating to apportionment. The sole question, then, is whether there was evidence in the record sufficient to show that the harm was divisible based on a "reasonable and rational basis" – i.e., "evidence of the respective quantities of pollution discharged . . . ." Restatement (Second) Torts § 433A cmt. d.

As the district court itself noted before proceeding to apportion liability, "Shell did not present evidence how its products' contribution to the contamination at the Arvin facility can be apportioned." (Pet. App. 252a.) Believing that it was required to engage in an apportionment notwithstanding Shell's failure of proof (*id.* at 237a), the district court made its best guess at how much D-D was delivered every year for the 23-year period that Shell acted as an "arranger" based on five years of chemical sales data (122,390 gallons per year); based on some general evidence of delivery truck capacities (~4,500 gallons), its best guess at how many deliveries per year were required to deliver the chemical (27); and its best guess about how much chemical spilled on average during each delivery (three gallons) based on

testimony that "a few cupfuls to five gallons" spilled on every delivery, to arrive at a numerator for its ratio (23 x 27 x 3 = 1,863 gallons spilled during delivery).

The court then assumed that it could identify every other activity on the Brown and Bryant site that resulted in releases of the D-D after the chemical was placed into the bulk tanks (e.g., transfer of D-D from bulk storage to bobtails; transfer of D-D to rigs; and checking of nurse tank filters); and made a series of factually unsupported assumptions about both the regularity of the relevant events (e.g., assumed that bobtails were washed out 70% of the time) and the amount of D-D that spilled or leaked at each point (e.g., in transferring D-D from the bulk tank to the bobtails, though "[t]he spills are not quantified . . . it is assumed that spills ranged from a cup to [a] quart") to arrive at the denominator for its ratio. As noted above, the district court concluded: "The percentage of D-D spills resulting from Shell deliveries is calculated by dividing 1,863 gallons (the D-D spilled through Shell controlled deliveries) by 31,212 gallons (the total amount of D-D spills) to equal approximately 6%."

The district court's sua sponte, back-of-the-envelope apportionment in this case stands in marked contrast to that in *Asarco*, 280 F. Supp. 2d 1094 (D. Idaho 2003), a case cited by Shell. In *Asarco*, defendant mining companies, Asarco and Hecla, along with other mining companies released tailings containing hazardous metals into the Coeur D'Alene

Basin over the period of many years. The parties to the litigation retained experts to calculate the amount of tailings released by the various companies' ore milling. *Id.* at 1104. The experts investigated the operations of 22 mills, representing 97-98% of the mining production in the basin. *Id.* at 1105. By evaluating the tonnage of material that went into each mill as compared to the concentrate produced, historical information on milling methods, and the type of concentrate used, the experts estimated the total tailings released into the basin at 64,390,000 tons, and that Asarco's and Hecla's contributions were 22% and 31% respectively. *Id.* The *Asarco* court rightfully noted that "estimating releases is not an exact science" and acknowledged that "[d]ivisibility of the common harm to the Basin based on causation using volumetric calculations may not be the 'perfect' method of divisibility"; based on the expert testimony, the court held it to be "reasonable based on the historical facts available in this particular case." *Id.* at 1120.

California acknowledges that in *Asarco*, the parties' experts on tailing releases necessarily estimated recovery rates since there were no detailed company records setting out this information. *Id.* at 1120. The experts, however, relied on historical evidence of milling methods in making these estimates. *Id.* at 1105 n.9. The evidence for divisibility did not consist of assumptions or best guesses made by the trier of fact, but of expert testimony, which satisfied the requirements of Rules 702 through 706

of the Federal Rules of Evidence.[9] The *Asarco* case thus does not stand for the proposition that a trial court can create its own expert evidence where defendants have failed to introduce it.[10] The district court's reliance on speculation, based on its own unsupported assumptions, constitutes clear error. The court of appeals properly did not allow the district court's best guesses to substitute for evidence that would support apportionment.

Shell contends that any rule that would deny it apportionment in this case effectively amounts to

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[9] Requiring evidence in the form of expert testimony rather than allowing the trier of fact to rely on unsupported assumptions affords the plaintiff the opportunity to counter such testimony with that of its own experts. California and the United States were denied that opportunity in this case.

[10] A court may, of course, make certain limited and supported assumptions in apportioning liability. Taking the Restatement's example of the trespassing cattle, it may be reasonable for a court to assume (unless there is contrary evidence) that the cows are of a similar size and weight and tend to behave in similar ways such that each owner is liable to the injured farmer in proportion to the number of cows. *See* Restatement (Second) of Torts § 433A cmt. d. This is eminently reasonable where the mechanism of harm is the action of a group of wayward cows on a single occasion, but it does not sanction the degree of speculation in which the district court engaged in this case. Nothing suggests that a court could, for example, apportion the crop damage for 30 years of trespass by assuming that the average farm has 5 cows, 5 sheep, and 5 pigs on any given year, and the average animal escapes 3 times per year, a cow tends to eat a pound of grain on each escape, a sheep ½ pound, and a pig ¼ pound, and so on.

mandatory joint and several liability. (Shell Br. 32.) This argument is unsupported. In this case, the court of appeals did no more than apply the long-established "rule placing the burden of proof as to apportionment upon the defendant . . . ." Restatement (Second) of Torts § 433B cmt. d. As the Restatement provides, the reason for the rule, which is consistent with the purposes underlying CERCLA, is to avoid the injustice of leaving the plaintiff to bear the costs of harm that "has combined with similar harm" inflicted by others. *Id.* "In such a case, the defendant may justly be required to assume the burden of producing that evidence, or *if he is not able to do so, of bearing full responsibility*." *Id.* (emphasis added). The same rule should apply where, as here, a defendant chose to take an all-or-nothing approach to liability and chose not to submit evidence supporting apportionment. California and the taxpayers should not bear the lion's share of the cost of the harm for which Shell and the Railroads are responsible.

c. By taking equity into consideration, the district court wrongly conflated apportionment of harm with allocation of damages

The circuit courts of appeals have recognized that apportionment under the Restatement and CERCLA Section 107 is not governed by considerations of equity, but rather by principles of causation of harm. *See, e.g., Hercules*, 247 F.3d at 718; *Brighton*, 153 F.3d at 319; *Monsanto*, 858 F.2d at 171 n.22; *Rohm &*

Haas Co., 2 F.3d at 1280. CERCLA does not, however, ignore equity. Rather, Congress expressly allowed parties that have resolved their liability to the United States or a state or that have been sued under Section 106 or 107 of CERCLA, 42 U.S.C. §§ 9606, 9607, to seek contribution from others that are liable or potentially liable. 42 U.S.C. § 9613(f)(3)(B); *Cooper Industries, Inc. v. Aviall Services, Inc.*, 543 U.S. at 165-66. The statute expressly provides that "[i]n resolving contribution claims, the court may allocate response costs among liable parties using such equitable factors as the court deems appropriate." 42 U.S.C. § 9613(f)(1).

As this Court has noted, a defendant in a Section 107(a) suit can "blunt any inequitable distribution of costs by filing a § 113(f) counterclaim." *United States v. Atlantic Research Corp.*, ___ U.S. ___, 127 S. Ct. 2331, 2339 (2007). California expresses no opinion about whether the district court's assumptions and best guesses might have been appropriate in a contribution proceeding where response costs would be divided equitably as between Shell and the Railroads. The law is clear, however, that such considerations have no place in apportioning harm, with the result that California, and its citizens, having no connection to the Brown and Bryant site and having benefitted in no way from its operation, bear 85% of the site cleanup costs.

CONCLUSION

For the foregoing reasons, California respectfully requests that the Court affirm judgment of the court of appeals.

Dated: December 22, 2008

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REPLY BRIEF

Supreme Court, U.S.
FILED
JAN 16 2009
OFFICE OF THE CLERK

Nos. 07-1601, 07-1607 (Consolidated)

In the Supreme Court of the United States

THE BURLINGTON NORTHERN AND SANTA FE RAILWAY COMPANY AND UNION PACIFIC RAILROAD COMPANY,

PETITIONERS,

v.

UNITED STATES OF AMERICA, ET AL.,

RESPONDENTS.

SHELL OIL COMPANY,

PETITIONER,

v.

UNITED STATES OF AMERICA, ET AL.,

RESPONDENTS.

ON WRITS OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

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ARGUMENT

I. RESPONDENTS CONCEDE THE BASIC LEGAL PRINCIPLES THAT SUPPORT APPORTIONMENT

Respondents effectively concede that the briefs filed by the Railroads and Shell accurately characterize the law governing apportionment under CERCLA.

1. The United States concedes that "common-law principles are to apply unless CERCLA 'speak[s] directly to the question.'" US Br. 18 (quoting *United States v. Bestfoods*, 524 U.S. 51, 63 (1998)). Respondents identify no clear statement in CERCLA that displaces common-law apportionment principles, and they assert that §433A of the Restatement (Second) of Torts supplies the governing test.[1]

The Railroads' opening brief explained that the common law traditionally recognized "pollution as the *paradigmatic* apportionable harm," Pet. Br. 26, and that the Second Restatement represents the "triumph"

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[1] The United States identifies two authorities "suggest[ing]" that CERCLA's structure and purpose require a standard of proof more demanding than common-law principles. US Br. 35 n.16. *United States v. Hercules, Inc.*, 247 F.3d 706, 715-17 (8th Cir.), *cert. denied*, 534 U.S. 1065 (2001), does not modify Restatement principles. *United States v. Capital Tax Corp.*, 545 F.3d 525, 535 (7th Cir. 2008), notes uncertainty about the "fit" between Restatement §433A and CERCLA, but concludes that apportionment is proper if a share of liability "is susceptible to a 'reasonable estimate.'" The United States soundly does not ask this Court to adopt a more demanding standard. *Cf. Norfolk S. Ry. v. Sorrell*, 127 S. Ct. 799, 808 (2007) (statute's broader purposes insufficient to abrogate common-law standard of causation).

of the views of William Prosser, who saw joint and several liability as an outmoded relic only to be applied "when there is no reasonable alternative." *Id.* at 27, 26.[2] Respondents vaguely suggest that pollution from commingled waste is inherently incompatible with apportionment, *see, e.g.*, US Br. 33, but never deny that the common law reached the opposite conclusion.

Petitioners also demonstrated that apportionment requires only reasonable *assumptions* and *estimates*. Common-law courts facing "'practical difficulty'" in apportionment embraced "'an approximation to accuracy'" before saddling a defendant with damages for which he is not causally responsible. Pet. Br. 30 (quoting *Sellick v. Hall*, 47 Conn. 260, 274 (1879)); *see also Fed. Sav. & Loan Ins. Corp. v. Reeves*, 816 F.2d 130, 136-37 (4th Cir. 1987) ("'[W]here the extent of the harm or damage inflicted by the separate acts is seemingly incapable of any definite proof or ascertainment by evidence, the apportionment has been left to the fact triers nevertheless.'") (citation omitted). The Railroads highlighted common-law precedent permitting apportionment based on impressionistic eyewitness testimony, Pet. Br. 31-32 (citing *Hill v. Chappel Bros. of Mont., Inc.*, 18 P.2d 1106 (Mont. 1932)), and "'the best possible estimate[s]'" when "'the nature of things'" prevented more precise or authoritative evidence, *id.* at 32 (quoting *Hill*, 18

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[2] Citing §433A comment i, the United States notes that some kinds of harms are by their nature incapable of apportionment. US Br. 33. Comment i, however, refers to harms that are *theoretically* incapable of apportionment. The Ninth Circuit correctly found that the contamination here is not such a harm.

P.2d at 1110); *id.* at 31 (quoting *Powers v. Kindt*, 13 Kan. 74, 76 (1874)). The Railroads also explained that apportionment principles have always been inextricably linked to the common law's equally generous approach to the plaintiff's proof of damages—and that these flexible standards apply whether the plaintiff or defendant bears the burden of proving apportionment. *Id.* at 30-31.

Respondents neither genuinely challenge that explanation of the common-law authorities nor defend the Ninth Circuit's unsupported assertion that apportionment requires "records" separating out with "precision" the chemicals stored and spilled on various areas of the facility over time. Pet.App.-40a-41a. For the most part, Respondents simply ignore both the common-law authorities and the district court's extensive findings, and rely on a factually inaccurate assertion (*see infra* at 7) that *no* evidence or argument pertaining to apportionment was offered at trial.

The handful of assertions that Respondents do make about the common law are all inaccurate. First, DTSC claims that "rough estimates" are permissible only in apportioning between two "distinct harms," as opposed to unitary harms with multiple causes. This argument is raised for the first time in DTSC's brief to this Court and is therefore waived. Regardless, it is meritless. DTSC is simply observing that the phrase "rough estimate" happens to be used in the Restatement comment addressing distinct harms, but not in the one addressing unitary harms. But the Restatement cites a wealth of cases apportioning liability for single harms on the roughest of approximations. *See, e.g., Hill*, 18 P.2d at 1109 (destruction of plaintiff's pasture); *Thomas v. Ohio*

Coal Co., 199 Ill. App. 50, 56-57 (1916) (pollution of plaintiff's creek); *see also* Pet. Br. 31-32 & n.6.

Second, the United States baldly claims that there is "no authority" to justify an apportionment when "it appears likely that the share overstates [a defendant's] actual contribution," US Br. 42, but it completely ignores common-law precedent explaining that protecting the plaintiff by measuring each defendant's share "with a liberal hand" is preferable to joint and several liability, Pet. Br. 29 & n.5 (quoting *Little Schuylkill Navigation, R.R. & Coal Co. v. Richards's Adm'r*, 57 Pa. 142, 147 (1868)).

Third, Respondents criticize the district court's recognition that joint and several liability would be unduly harsh here. As explained below, *infra* at 12-18, the district court did not improperly import equitable considerations into its causal apportionment. But the cases, which Respondents again ignore, show that the common law's generous approach to causal apportionment was shaped, in part, by a judicial recognition that burdening a defendant with "damages to which he is not legally liable" is unfair and ill-advised when any reasonable basis for division exists. *Sellick*, 47 Conn. at 274. The common law chose "practical justice" to prevent instances in which "the most innocent wrongdoer may, at the mere will of the plaintiff, be held for all the damage" or "by a slight negligence overwhelmed by others in gigantic ruin." *William Tackaberry Co. v. Sioux City Serv. Co.*, 132 N.W. 945, 952 (Iowa 1912); *Little Schuylkill*, 57 Pa. at 146. That is precisely the sentiment that led Congress to excise a proposed mandatory joint and several liability provision from CERCLA in favor of common-law apportionment principles. *See* Pet. Br. 5 (citing 126

Cong. Rec. 30972 (1980)). Respondents' suggestion that the contribution provisions added six years later were Congress's primary gesture toward fairness to PRPs in CERCLA, US Br. 4, is obviously incorrect.

Finally, Respondents have little response to the Railroads' observation that recent common-law cases "increasingly favor[] apportionment," using probabilistic assumptions to apportion even injuries considered theoretically indivisible by the Second Restatement. Pet. Br. 26, 32-33. The United States oddly suggests that the Second and Third Restatement approaches are consistent. US Br. 31 n.14. If so, the United States must endorse the views that even for theoretically indivisible injuries joint and several liability conflicts with the increasing predominance of comparative responsibility, and that "[n]o party should be liable for harm it did not cause, and an injury caused by two or more persons should be apportioned according to their respective shares of comparative responsibility." Third Restatement §10 cmt. a, §26 cmt. a; *see also* §§B18-E19 (offering four alternative "tracks" for apportioning even theoretically indivisible injuries).

Alternatively, the United States argues that this Court should only consider the Second Restatement because it was contemporaneous with CERCLA. US Br. 31 n.14. Congress intended courts to follow "traditional and *evolving*" common-law principles of apportionment. *United States v. Chem-Dyne*, 572 F. Supp. 802, 808 (S.D. Ohio 1983) (emphasis added); *cf. Sorrell*, 127 S. Ct. at 807-08 (2007) (relying on Third Restatement to define liability). And many of the cases demonstrating the common law's increasing flexibility predate CERCLA's enactment or amendment. Pet.

Br. 32-33. Regardless, this issue has little practical relevance here since apportionment is so clearly proper under Second Restatement principles.

2. Respondents also concede that the district court's apportionment should have been reviewed for clear error. *Id.* at 39-40. Clear-error review is consistent with the common law, the intensely factual nature of these determinations, and the way courts review the parallel question of whether damages have been proven with reasonable certainty. *Id.* at 40-41; *Zenith Radio Corp. v. Hazeltine Research, Inc.*, 395 U.S. 100, 125 (1969) (stating clear-error standard for reviewing certainty of damages); *Reeves*, 816 F.2d at 136 ("The issue of apportionment [under §433A], in particular, is one on which juries are typically given wide latitude.").

The United States simply—and erroneously—states that the Ninth Circuit applied clear-error review, US Br. 11, effectively conceding that the district court's judgment should be upheld if *any* factfinder could reasonably draw the same inferences. *See Reeves*, 816 F.2d at 137 ("The jury here clearly perceived some basis for differentiating the liability of the three defendants. We see no compelling reason to disturb that assessment.").

DTSC agrees that clear-error review applies to credibility findings but claims that the Ninth Circuit's second-guessing of the district court's factual inferences was justified. DTSC Br. 37 (citing *Anderson v. City of Bessemer City*, 470 U.S. 564, 574-75 (1985); *United States v. Taylor*, 487 U.S. 326, 337 (1988)). DTSC fails to note *Anderson*'s explicit rejection of their suggestion that clear-error review is

limited to credibility. 470 U.S. at 574. While DTSC's citation of *Taylor* appears to suggest that abuse-of-discretion review, the factual nature of causal apportionment, and its strong connection to proof of damages with reasonable certainty, make clear-error review more appropriate. But neither standard is consistent with the Ninth Circuit's *de novo* review of "whether the party with the burden of proof met that burden," Pet.App.-36a, and the district court's apportionment here would have to be upheld under either.

II. RESPONDENTS' WAIVER ARGUMENTS WERE REJECTED BY TWO COURTS BELOW

The United States relies heavily on the suggestion that the Railroads waived any right to apportionment by pursuing a trial strategy focused on demonstrating that they had no liability. US Br. 35-38. DTSC similarly contends that the Railroads offered "no evidence to support apportionment." DTSC Br. 48. The record flatly contradicts these arguments, which have already been rejected by the district court, by the Ninth Circuit, and at least implicitly by this Court when it granted certiorari over these same objections from the United States. *See* Railroads' Cert. Reply Br. 4-6.

1. In pretrial briefing, the Railroads denied that any contamination from their parcel contributed to the groundwater plume, but they also argued that if they were found liable "such harm is reasonably capable of apportionment on the basis of relative mass." US ER 112-13. The Railroads supported this theory with expert testimony and eyewitness accounts at trial. For

example, Kalinowski testified that the costs of the EPA's groundwater remedy were substantially proportional to the amount of groundwater contamination and that responsibility could be apportioned based on relative mass if the court concluded that some contaminants from the Railroad parcel had migrated into the groundwater plume. *See* SER 263-64 (addressing "the divisible contribution to remedial action costs" caused by chemicals originating from "any specific source or specific area" of the facility).

The Railroads' entire case was based on showing how little—if any—groundwater contamination originated from the Railroad parcel and contrasting that with overwhelming evidence of contamination originating from B&B's parcel. The Railroads adduced all available information by questioning nearly a dozen witnesses at trial with first-hand knowledge of activities on the parcels. The Railroads could not document the "precis[e]" volume of spills on the Railroad parcel only because the Railroad parcel was typically used for storing "empty things," Pet.App.-41a; Brown Tr. 1003, and thus few of the witnesses could remember any spills.[3] Respondents also have not contended that the Railroads withheld documents

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[3] *E.g.*, JA-55 ("Q. Did you ever see any chemical spilled over there on the west side while you worked there? A. Not on the west side."); Dickey Dep. 38 (read into record at Tr. 4199) ("Q. Did you ever see anything get spilled on the ground over here on the west side of the warehouse or the maintenance building? A. No. I never seen nothing spilled over here."); JA-222 ("Q. Is it accurate to say that you never actually saw releases from sight gauges on the leased property? A. I can't remember any that I saw.").

relevant to divisibility; very few records survived B&B's closure and the Railroads sought what little did remain through discovery.[4] The soil sampling evidence also proved that there was no direct migration of contaminants from the surface of the Railroad parcel down to the groundwater—which left the Respondents' improbable surface runoff theory as the only way that the Railroad parcel could have contributed to the groundwater contamination *at all*. Pet. Br. 15-16.

In light of that evidence, the Railroads understandably argued that they had *no* responsibility for the groundwater cleanup. (The Railroads assumed responsibility for the study costs on the Railroad parcel itself, totaling $489,727, as well as the future cost of paving over the Railroad parcel. Pet.App.-252a.) But the trial evidence bears strongly on apportionment even if the Railroads fell short of showing that *none* of the groundwater contamination came from their parcel. Accordingly, the Railroads' proposed findings of fact stated, in the alternative, that any share of contamination from the Railroad parcel was "apportionable." US ER 172.[5] Similarly, the United

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[4] Brown testified that while closing down the Arvin facility he destroyed some of the company's business records. Brown Tr. 918. By the time B&B abandoned its secondary facility at Shafter in 1989-90, only 270 documents survived to be microfilmed. *Id.* at 940-41.

[5] The United States contends that the Railroads' apportionment expert, Kalinowski, "assumed that none of the facility's contamination was caused by disposals on the Railroad parcel" and thus "the Railroads' only argument and evidence was that they contributed zero." US Br. 36-37. Kalinowski made clear, however, that his assessment about whether the Railroad parcel

States's proposed findings of fact devoted 26 paragraphs to the issue of whether the Railroads were entitled to apportionment. US Findings of Fact 118-30. And the Governments' Response to the Railroads' Proposed Findings of Fact and Conclusions of Law acknowledged (at 4) that that the Railroads' "first 101 Proposed Findings of Fact generally relate to the issue of the amount of contamination that came from both parcels." Respondents should not have been surprised, then, when the district court found that "*[a]s demonstrated by the Railroads*, the relative mass of chemicals released on the [parcels] is an appropriate factor to take into account in determining the Railroads' apportionable share of the divisible harm." Pet.App.-248a (emphasis added).

The United States's claims of waiver and lack of opportunity to litigate apportionment (US Br. 41) thus were properly rejected by the district court. After the court issued its initial findings and conclusions, Respondents moved to amend, claiming that the Railroads' "scorched earth" litigation strategy waived apportionment, and arguing that the actual apportionment was erroneous. US ER 478-80, 482. The district court explained that it did not "[m]ake up" the apportionment but rather "relied on record evidence" on "duration, volume, and nature of hazardous substance release," *id.* at 482, and held that the issue had not been waived, *id.* at 488. The suggestion that the district court found that the Railroads submitted no evidence on apportionment, US

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contributed to the harm had no effect on his testimony about divisibility generally. JA-303-04, 308.

Br. 8, gets the truth exactly backward. The district court amended its original findings to clarify that such "[e]vidence was offered." US ER 488. Finally, the court considered and rejected Respondents' claim that, on the merits, the apportionment was improperly based on "unproven assumptions." *Id.* at 483-87.

Appellate courts applying the Restatement have affirmed apportionments that were substantially more "unexpected" than the one here. In *Reeves*, for example, the jury apportioned liability even though the plaintiff *only* sought joint and several liability and the instructions "repeated[ly]" told the jurors to "assign damages for each count, *without* a breakdown for each defendant." 816 F.2d at 137 n.8 & 136. The Fourth Circuit nevertheless affirmed because, as here, there was "ample evidence in the record which demonstrates the differing roles and responsibilities of the defendants." *Id.* at 136; *see also Hill*, 1932 Mont. LEXIS 17, at *1 (counsel complaining that "[n]o attempt was made" to differentiate between the damage done by defendant's horses and others').

2. When Respondents rehashed these arguments on appeal, the Ninth Circuit readily concluded that they were "not supported by the record" and "that the issue of apportioning liability was not waived and is properly before us." Pet.App.-20a-21a n.16. Respondents again cite *Burdett v. Miller*, 957 F.2d 1375, 1380 (7th Cir. 1992), where the district court ruled in a plaintiff's favor on a theory of liability not mentioned in the complaint, pretrial order, pretrial briefing, motion for a directed verdict, or in any post-trial briefing. Both the district court and the Ninth Circuit rejected the factual predicate for such an analogy.

3. Respondents assert that the record contains no evidence bearing on apportionment, but the district court disagreed and Petitioners' opening briefs here contained extensive analysis of, and citation to, the substantial evidence the trial court credited. Respondents' briefs largely ignore the voluminous record at issue here, which includes twenty-seven days of trial testimony. Respondents have the burden of showing clear error, and should be held to the consequences of *their* strategic decision to refuse meaningful engagement with the actual evidence before this Court.

III. THE DISTRICT COURT PROPERLY APPLIED COMMON-LAW PRINCIPLES

1. Respondents argue that the district court conflated causal apportionment with equitable considerations. US Br. 39-40; DTSC Br. 58-59. This is misdirection, as the court of appeals recognized. The Ninth Circuit found an "insufficient logical connection" between the district court's apportionment factors and causation of the harm. It did *not* accept Respondents' argument that the district court improperly used equitable factors to divide liability. Pet.App.-43a; *see* Pet.App-37a-44a.

The district court's actual divisibility analysis (*see* Pet.App.-245a-52a ¶¶472-489) properly focused on comparative causal responsibility alone. The court explained that it was "estimat[ing] the maximum contribution of each party's activities that released hazardous substances that *caused*" the contamination. Pet.App.-239a (emphasis added). Accordingly, it considered: the amount of surface area upon which spills could occur; the intensity of activity and amount

of spills on the Railroad parcel; the amount of time the parcel was used in a manner susceptible to spills; whether and how spills on the Railroad parcel could have reached the groundwater; and which chemicals spilled on the Railroad parcel likely added to the contamination that had to be remedied. Geography, time, and distinctions among contaminants are quintessential factors for *causal* apportionment. *See* Pet. Br. 41-46; DTSC Br. 22. The precedent on which the court primarily relied for its apportionment, moreover, was *In re Bell Petroleum Services, Inc.*, 3 F.3d 889 (5th Cir. 1993), which indisputedly follows the common-law causation approach. *See* Pet.App-246a, 248a.

Respondents point to the district court's separate discussion of "equitable apportionment," in which the sole question was the "'extent to which a defendant's liability may be offset by the liability of another.'" Pet.App.-239a (citation omitted). The district court was explicitly referring to *contribution* under CERCLA §113(f)(1), which the court distinguished from apportionment under Restatement principles. *See* Pet.App.-232a-39a.

Respondents are also in no position to complain about the district court's phraseology, because they repeatedly invited it. In their summary judgment briefing, for instance, Respondents argued that apportionment was "discretionary," that "Congress intended federal courts to retain flexibility in determining when to apportion," and that apportionment was "not appropriate under the unique facts of this case" *for equitable reasons*. SER 25-27. Respondents relied on a proposed amendment to CERCLA that would have introduced equitable "Gore

factors" into apportionment analysis. *See id.* The opinion's reference to §113(f)(1) contribution as "equitable apportionment," Pet.App.-239a, which Respondents now attack, traces directly back to their arguments.

Yet the district court did not actually commit the error invited by Respondents. Nowhere in its apportionment analysis does the court apply equitable considerations. One such Gore factor is a party's actual involvement in the contaminating activity. *See United States v. Twp. of Brighton*, 153 F.3d 307, 318 (6th Cir. 1998). The district court, however, explained that the extent of the Railroads' involvement in the spills was irrelevant to apportionment. Pet.App.-246a-47a. Nor does the analysis consider other equitable factors like the Railroads' degree of care, cooperation with government officials, and efforts to prevent harm to the public. *Twp. of Brighton*, 153 F.3d at 318-19; *see* Pet.App.-245a-52a.

2. Respondents criticize the district court's observation that it would be "manifestly inequitable" to require the Railroads to bear the burden of B&B's insolvency. US Br. 39; *see also* DTSC Br. 58-59. Again, that observation played no part in the actual apportionment analysis. The district court was simply rejecting *Respondents'* argument that causal apportionment should yield to equity. SER 25-33. Respondents' real complaint is that they wanted the district court to exercise equitable discretion in *their favor* because of B&B's insolvency.

Refusing that invitation was not an abuse of discretion. First, the suggestion in Second Restatement §433A comment h that courts may

equitably impose joint and several liability when one tortfeasor is insolvent does not correctly state the prevailing law. Considerations of fairness inform the flexibility with which parties can prove their divisible share, *supra* at 4-5, but apportionment is a causal inquiry—as Respondents concede. US Br. 33-34; DTSC Br. 58-59. Accordingly, federal courts of appeals have refused to apply comment h under CERCLA, *see Hercules*, 247 F.3d at 718 n.10; *Bell Petroleum*, 3 F.3d at 901 n.13, and Respondents are unable to muster a single case in which a court overrode its causal apportionment based on comment h. The Restatement and its accompanying Reporter's Notes and Appendix cite no authority supporting comment h, and it is clearly inconsistent with the case law underlying the rest of §433A—which endorses generous apportionment standards precisely because it would be unfair to force a minor offender to bear responsibility for the entire harm.[6] Common-law courts have long found apportionment proper even when a plaintiff is unable to secure a judgment from absent defendants. *See, e.g., Dooley v. Seventeen Thousand & Five Hundred Head of Sheep*, 35 P. 1011, 1012-13 (Cal. 1894) (no joint and several liability when "about 2,500 head" of livestock owned by an unknown party inflicted part of the damage); *Hill*, 18 P.2d at 1108 (same); *Anderson v. Halverson*, 101 N.W. 781, 781 (Iowa 1904) (same).

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[6] Section 26 of the Third Restatement, which the United States claims is the indistinguishable counterpart to §433A of the Second Restatement, US Br. 31 n.14, has no equitable override for insolvency.

Second, if the door were to be opened to equitable considerations, there is no conceivable justification for considering only the Respondents' equities. The district court reasonably observed that equity does not require or support the imposition of joint and several liability on "a passive owner of a contiguous parcel, not representing more than 19% in area of a CERCLA site, operating less than 44% of the time, where substantially smaller volumes of hazardous substances releases occurred." Pet.App.-245a.

Third, the use of CERCLA to create retroactive and extreme derogations from the common-law of landowner liability would also make invocation of comment h particularly inequitable in this case. *See Bell Petroleum*, 3 F.3d at 901 n.13 (applying comment h unfair because "[u]nder CERCLA's strict liability scheme, the deck of legal cards is heavily stacked in favor of the government").[7] Landowners are not liable under the common law for their lessees' torts. *See, e.g., Resolution Trust Corp. v. Rossmoor Corp.*, 40 Cal. Rptr. 2d 328, 331 (Cal. Ct. App. 1995); *see also* AAR Amicus Br. 21-22 (collecting authorities). At common law, Respondents would have to prove by a preponderance of the evidence that the *Railroads* caused any contamination, not just that contamination happened to occur on the Railroads' land.

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[7] The United States has no substantive response to the grave constitutional concerns that joint and several liability would raise in this case, *see* Pet. Br. 57-59, preferring again to rest solely on unfounded accusations that the Railroads somehow waived apportionment. US Br. 38 n.18.

Even with the deck stacked in their favor, Respondents barely prevailed. The district court expressly rejected Respondents' trial theory of contamination via "focused infiltration." Pet.App.-248a. Instead, the Railroads were held partially responsible only because they did not disprove the Respondents' merely "plausible" theory of surface runoff. *Id.* The district court was well within its discretion in concluding that "justice" did not recommend finding that passive landlords who collected roughly $14,000 in rent over fourteen years should bear constitutionally dubious, retroactive, joint and several liability, potentially amounting to more than $40 million, simply because they failed to prove that rainfall over a decade of disposal never carried any of B&B's spills from the Railroad parcel to the waste pond on B&B's land. Pet.App.-239a; Pet. Br. 3, 13 n.4.

Finally, policy concerns about the public fisc should not override the common law's preference for apportionment. Pet. Br. 52-57. No clear statement in CERCLA declares that defendants should be denied apportionment when there are orphan shares, and such a rule would nullify congressional intent by denying apportionment whenever it matters most. *See Bestfoods*, 524 U.S. at 62-63. Congress's creation of the Superfund reinforces this conclusion. Pet. Br. 53. The Superfund was financed by environmental corporate taxes and levies on petroleum and chemicals. *Id.* As the United States observes, Congress intended to "place[] the costs of releases ... on the *sector* most responsible for pollution and which benefits most from chemical production." US Br. 30 (quoting 126 Cong.

Rec. 31978 (1980) (emphasis added)).[8] Having the Superfund—not passive landowners like the Railroads—pay for orphan shares does just that.[9]

IV. THE DISTRICT COURT APPORTIONED LIABILITY ON A REASONABLE BASIS

Respondents' factual arguments are no more persuasive than their legal arguments, and betray a complete lack of engagement with the record. The district court's conclusion that the evidence discloses a reasonable basis for apportionment rests on findings and inferences that are well supported by the record and that Respondents never expressly challenge under the clearly erroneous standard. The commonsense nature of the trial court's approach is reflected by a Government expert's testimony that he would base an estimate of the share of contamination originating from the Railroad parcel on "something as simple as weighting the amount of activity at each site and the

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[8] Senator Jeffords's statement, which the United States uses to suggest that apportionment is exceptional, explains that CERCLA as enacted is "weaker with regard to imposing liability" than earlier versions because Congress eliminated mandatory joint and several liability. 126 Cong. Rec. 31978. The United States' repeated citation of S. Rep. No. 96-848 (1980) to cast doubt on apportionment is even more misleading. US Br. 3, 30 n.13. That report accompanied an earlier version of CERCLA that imposed *mandatory* joint and several liability. S. Rep. No. 96-848, at 31.

[9] Congress's failure in 1995 to reauthorize the Superfund taxes is hardly a clear statement that orphan shares should be imposed on solvent defendants.

area on each site and the time it was in operation." Walton Tr. 4077-78.

A. Theoretical Divisibility

Respondents make two threshold arguments regarding whether the harm at issue in this case is divisible at all. Both are raised for the first time in this Court and are therefore improper for review. Regardless, they have no merit. Pollution has always been regarded as the paradigmatic divisible harm, despite commingling and overlap in the necessary cleanup activities, unless there are synergistic harms of a kind not present here.

First, the United States speculates that surface runoff of contaminants from the Railroad parcel—which the district court found to be only "plausible," not proved—would have caused enough groundwater contamination to require the full EPA remediation efforts even without *any* contribution from the B&B parcel. US Br. 43. Since the Railroad parcel required *no* soil remediation, Pet. Br. 13, and the court found that *none* of the spills on the Railroad parcel reached the groundwater by downward migration, Pet.App.-96a-97a, that speculation defies credibility. Respondents' own expert regarding surface runoff, Walton, declined to opine as to whether the possible contamination originating from the Railroad parcel was sufficient to require *any* remediation. Walton Tr. 183.

Even granting Respondents' premise, however, the harm attributable to the Railroad parcel would be apportionable. The EPA's A-zone groundwater remedy, based primarily on the use of granulated activated carbon ("GAC") to absorb chemical contaminants, is "a mass-driven removal scheme" in

that the amount of GAC required depends on the mass of the targeted contaminants. JA-288-89, 355-58. The cost of reducing the groundwater contamination levels to the EPA's "cleanup goal," Pet.App.-148a, is accordingly tied to the mass of chemicals above the remediation threshold, which is plainly divisible.

The common law has long found apportionment proper in similar circumstances. In *Johnson v. City of Fairmont*, for instance, a sewer and a canning factory independently and intermittently polluted the plaintiff's stream. 247 N.W. 572, 572 (Minn. 1933). The sources produced "different offensive odors" with varying degrees of frequency and pungency that would "mingle and fuse" on the plaintiff's farm. *Id.* Further, "the evidence [was] sufficient to establish a cause of action based on the nuisance against either defendant." *Id.* at 573. Nevertheless, the defendants could be held liable only for their contributions to the nuisance. *Id.* In *Thomas v. Ohio Coal Co.*, a defendant owned 18 of approximately 80 wells whose deposits of oil and saltwater destroyed the plaintiff's stream. 199 Ill. App. at 56. The pollution rendered the water unpotable for the plaintiff's cattle, "made the cows' bags greasy and hard to get the milk," and damaged his pastures. *Id.* at 53-54. *Thomas* found it reasonable to assume that the defendant's share of harm to the creek, cattle, dairy production, and pasturage roughly tracked its proportional share of salt, water, and oil. *See id.* at 53-57.

Second, Respondents speculate that variation in the toxicity and remediation costs of the contaminants here precludes apportionment. US Br. 44-45. Respondents simply ignore the undisputed facts, made clear in Petitioners' opening brief, that there are no synergistic

effects at issue and that the EPA's remedy "can treat all three chemicals with a common process." Pet. Br. 38 & n.9. It was thus perfectly reasonable (and certainly not clearly erroneous) for the district court to find that the harm attributable to the Railroad parcel was proportionate to *or less than* its share of the total contamination.

B. Geography

Respondents contend that geographic divisibility is only appropriate in circumstances involving non-contiguous areas or distinct plumes of groundwater contamination. US Br. 46. The Restatement includes no such limitation: Petitioners need only show that a "reasonable basis exists for determining the contribution of each cause to a single harm." Petitioners have demonstrated that geography provides a suitable proxy for relative responsibility "so long as (1) spill-producing activities on the defendant's land were proportionate to land area, or less; and (2) the spills on the defendant's land were not more likely to cause remediable harm than spills elsewhere." Pet. Br. 41. Ample record evidence supports those premises here, and distinguishes this case from *United States v. Rohm & Haas Co.*, 2 F.3d 1265, 1280 (3d Cir. 1993), *overruled on other grounds by United States v. E.I. DuPont De Nemours & Co.*, 432 F.3d 161 (3d Cir. 2005) (en banc), where a defendant sought geographic apportionment based solely on its percentage ownership of the facility.

Respondents do not seriously challenge the district court's finding that spills on the Railroad parcel were

(at worst) proportionate to its size.[10] Instead, Respondents argue that, due to variables such as the presence of water, "the district court had no reasonable basis for assuming whether those spills were more or less likely to contaminate the subsurface." US Br. 47. The record indicates, however, that these variables were either constant across the facility or were exacerbated on the B&B parcel. There is no doubt, for instance, that the B&B facility was exposed in equal measure to sun, wind, and rain. Respondents demand the "timing and location" of each release, *id.* at 48, but the geography of the facility made spills on the Railroad parcel far less likely to contaminate the

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[10] DTSC makes several incorrect and misleading statements about spills on the Railroad parcel. First, DTSC claims that B&B employees rinsed out nurse tanks on the Railroad parcel. DTSC Br. 7. In fact, the district court opinion and related testimony make clear that "B&B's employees rinsed out nurse tanks at the wash rack on the B&B parcel." Pet.App.-92a; *see also* JA-85-86. There were no water or hose fittings on the Railroad parcel. JA-134. Second, DTSC claims that B&B employees also checked nurse tank filters on the Railroad parcel. DTSC Br. 7. Although Merryman testified that B&B employees sometimes checked nurse tank filters on the Railroad parcel, the court found that they "preferred to check the [nurse tank] filters near the wash rack due to the effect D-D could have on the employees' skin." Pet.App.-92a; *see also* JA-141-42. Finally, DTSC states that D-D rigs could spill out as much as half a tank on the Railroad parcel when their sight gauges broke. DTSC Br. 7. Perhaps that was true on the B&B parcel, but Brown testified that B&B used the Railroad parcel to store "empty things," so the breakage of a D-D rig sight gauge on the Railroad parcel would presumably result in small spills, and Brown confirmed that he never saw a large spill on the Railroad parcel. Brown Tr. 1002-05. Neither did anyone else. Pet. Br. 11.

underlying groundwater. The only way for non-evaporated spills to migrate to the groundwater would have been through surface runoff of sufficient force to carry contaminants across the Railroad parcel, through a small pipe underneath the rail spur, and over two hundred feet of land with a "slight downward slope" on the B&B parcel.[11] Pet. Br. 15; Trial Ex. 1464A at RI-3-1. By contrast, the primary sources of non-rainfall water—the pond and sump—undisputedly were on the B&B parcel alone. Pet.App.-104a. Considerable testimony established that contaminants were washed into the sump on the B&B parcel—sometimes as much as 20 gallons at a time—on a *daily* basis. Pet. Br. 9-10. As Merryman explained, the wash rack on the B&B parcel was in use "*every hour [B&B] was open*" during the busy season. JA-130 (emphasis added). The district court thus had more than enough evidence to find that the Railroad parcel did not disproportionately contribute to the site contamination and so geographic apportionment was an appropriate basis for divisibility.

C. Time

Respondents contend that temporal divisibility is only appropriate in circumstances of "*successive* operation of the *same* harm-causing activity." US Br. 48. Again, the Restatement imposes no such conditions; the rate of contamination over time need only be constant enough to provide a "reasonable basis" for apportionment.

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11 DTSC erroneously states that the Railroad parcel was connected to the pond by a pipe. *Compare* DTSC Br. 49 *with* Pet.App.-95a.

Respondents also claim, without any record support, that "it is more reasonable to assume that the facility *increased* its contaminating activities after the Railroads became involved, such that temporal divisibility would *underestimate* their contribution." *Id.* at 49. But the district court's conclusion that time was a reasonable proxy for causal responsibility on this record has ample evidentiary support. Petitioners' opening brief detailed evidence that B&B's activities were reasonably consistent for the duration of its operation. Pet. Br. 17. For instance, evidence documenting B&B's annual D-D purchases indicates that the Railroad parcel did not substantially expand the operations at the facility. US SER 1019.[12] Further, all three contaminants at issue were banned before B&B's closure in 1988. *See* JA-408 (Nemagon (1979); D-D (1984); dinoseb (1986)). Such a total cessation of activity would likely offset any hypothetical increase in volume after B&B's lease of the Railroad parcel.

Moreover, Respondents ignore the "dramatic" changes B&B implemented to promote environmental compliance soon after leasing the Railroad parcel, including lining the sump and pond with "impermeable" materials, constructing a concrete can enclosure, building a containment system around the primary D-D

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[12] DTSC calls into question the five years of D-D delivery information cited by the district court, suggesting that this data is insufficient to presume a steady rate of operations and releases over the entire time period. DTSC Br. 51. DTSC fails to respond to the additional documentary evidence cited by Petitioners demonstrating that the court's assumption held true over nearly the entire period at issue. Pet. Br. 17.

tank, and installing a leak detector system. Brown Tr. 783, 974; Pet. Br. 16-17; SER 315, 331. Or, more accurately, they ignore such measures when convenient, but not when the United States dismisses as "simplistic" the district court's calculation of Shell's divisible share because it does not account for the "much lesser likelihood of groundwater contamination" after the sump was lined in 1979. US Br. 52. Respondents equally overlook evidence of B&B's disproportionate contamination during the early years of its operations. Brown described the "big problems" B&B experienced storing D-D in the early 1960s before getting Teflon seals and stainless steel tanks, resulting in "big leaks" on a constant basis. Brown Tr. 757-60. Thus, even if the facility experienced a marginal increase in activity after B&B leased the Railroad parcel, the associated contamination would be far less relative to the harm caused during B&B's first fifteen years of operation, when "B&B took almost no precaution to prevent the release of hazardous agricultural chemicals into the environment." Pet.App-130a.

Respondents also raise a new argument, not presented to the Ninth Circuit, that temporal apportionment contravenes CERCLA because it might result in a zero assignment of liability for current owners, which "could not have been what Congress had in mind." US Br. 49. In fact, Congress amended CERCLA in 1986 to provide additional protections for certain current owners because "confusion ... in the case law" was exposing innocent landowners to unintended liability. 131 Cong. Rec. 34716 (1985) (statement of Rep. Daub); 42 U.S.C. §9601(35); *see also Rohm & Haas*, 2 F.3d at 1280 (A zero apportionment

might be proper if a current owner "were able to prove that none of the hazardous substances found at the [owner's parcel] were fairly attributable to it.").[13] Regardless, this case does not remotely present that issue. The Railroads are not new landowners seeking to escape liability for a cleanup on their land by attributing all of the causal responsibility to prior owners or operators. They owned the Railroad parcel all along, and the "temporal divisibility" issue here is that the Railroads should not be liable as landowners for cleanup *on B&B's land* that is causally attributable to a 15-year period when the two parcels could not have been considered parts of the same "facility." Put differently, if Respondents had brought this cleanup action in early 1975 they would have had no statutory basis for imposing *any* liability on the Railroads for the then-existing contamination on B&B's parcel. That result should not change simply because Respondents delayed this suit.

D. Contaminants

Respondents argue that the district court incorrectly reduced the Railroads' liability by one-third "based on its assumptions that none of the D-D contamination requiring remediation originated on the Railroad parcel and that the other two chemicals

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[13] A current owner who acquired land that it knew or should have known was contaminated would presumably stand in the shoes of its predecessors, and thus could be ineligible for a zero apportionment. *See* Second Restatement §839 & cmt. d (possessors of land have responsibility to abate—and might otherwise be liable for—nuisances on their land, even if nuisance conditions were caused by previous possessors).

(dinoseb and Nemagon) contributed to 2/3 of the overall contamination." US Br. 49.

Respondents seek to undermine the first assumption by claiming that "significant D-D spills occurred on the Railroad parcel" due to B&B employees checking filters on D-D rigs. *Id.* at 49 n.24.[14] Although the Ninth Circuit found that the district court erred by excluding D-D, it did not deem clearly erroneous the finding that D-D spills were "slight." It reasoned that "[t]here is no evidence as to which chemicals spilled on the parcel, where on the parcel they spilled, or when they spilled. Yet, there *is* evidence that there may well have been leakage on the Railroad parcel of D-D." Pet.App.-42a. The Ninth Circuit's critique rested on a misstatement of the governing evidentiary standard and basis for divisibility.

The district court's conclusions do not depend on a complete absence of D-D spills on the Railroad parcel. They are instead supported by undisputed testimony demonstrating the implausibility of Respondents' theory that any "slight" D-D spills ever migrated across the Railroad parcel, through the pipe at its edge,

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[14] The record established that no more than a quart would spill when filters were checked, Pet.App.-91a, and the district court could have properly credited evidence indicating that the filters were primarily checked on the B&B parcel. Brown testified that D-D rigs were "typically parked" in an area to the west of the main gate that spanned both parcels, Brown Tr. 926; Trial Ex. 391, and Merryman testified that B&B employees preferred to check filters near the wash rack due to the corrosive nature of D-D, Pet.App.-92a.

over the entire length of the B&B parcel, and into the pond, in volumes sufficient to contribute to more than a *de minimis* share of the groundwater contamination there. *Supra* at 23. The D-D spills at issue were small, and Respondents' expert conceded that the constituent of concern[15] would evaporate "very, very easily very rapidly." Walton Tr. 23. Even a gallon spill—four times more than the spills associated with checking filters on the rigs (Pet.App.-91a)—would likely evaporate in less than an hour. Connor Tr. 2987. And the chances of any rainfall within an hour of a D-D spill in this "hot, desert area" (Walton Tr. 4111) were quite remote, *see* Pet. Br. 15, let alone a rainfall heavy enough to carry the spill more than 200 hundred feet.[16] Respondents also have no answer to the district court's finding, cited in Petitioners' opening brief, that the

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[15] Regarding the other D-D constituents, 1,3-DCP evaporated even more quickly than 1,2-DCP and the EPA found 1,2,3-TCP to be non-hazardous. Pet.App.-85a, 105a.

[16] The implausibility of Respondents' theory of runoff D-D contamination is underscored by the fact that the little rain that fell in Arvin usually came in the winter, Trial Ex. 1461A at RI-3-2 ("Rainfall occurs primarily from November through April ...."), while B&B's D-D work took place "mostly" in the "dry summers," Pet.App.-91a; Trial Ex. 1464A at RI-3-2. Merryman also testified that B&B "never" applied D-D in the rain. JA-164. And Respondents' expert conceded that, due to rapid evaporation, a "small spill" such as a gallon of D-D would not reach the pond on a "hot summer day" without a "fluke rainstorm." Walton Tr. 157-58. Walton acknowledged that his surface runoff calculations did not account for this seasonal variation, admitting that "the more you put the small spills in the hot, dry months or separated from rain, then the lower is the probability or amount of the spill that gets captured and goes to the groundwater." *Id.* at 226, 4129-30.

relative concentrations of D-D's chemical constituents found in the groundwater are inconsistent with a "surface spill" origin. Pet. Br. 16. Viewed under the correct evidentiary standard, it was not clearly erroneous to attribute all of the D-D contamination to the B&B parcel, where, for nearly twenty years, large quantities of D-D were poured into an unlined earthen sump with at least four feet of standing water on a daily basis. *Id.* at 8-10.

Regarding the court's second assumption, it was undisputed that dinoseb and Nemagon likely constituted far less than two-thirds of the contaminant mass in the groundwater plume. JA-362. If anything, then, the court overestimated the harm caused by the Railroad parcel by only reducing the Railroads' liability by one-third to account for D-D.

CONCLUSION

The decision of the Ninth Circuit should be reversed, and the district court's judgment should be reinstated. There is no need for a remand.

Respectfully submitted,

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JANUARY 16, 2009

AMICUS CURIAE BRIEF

13 (10) (12)

No. 07-1601, 07-1607

Supreme Court, U.S.
FILED
NOV 24 2008
OFFICE OF THE CLERK

IN THE

Supreme Court of the United States

THE BURLINGTON NORTHERN AND SANTA FE RAILWAY COMPANY, AND UNION PACIFIC RAILROAD COMPANY,
Petitioners,

v.

UNITED STATES OF AMERICA, AND DEPARTMENT OF TOXIC SUBSTANCES CONTROL, STATE OF CALIFORNIA,
Respondents.

SHELL OIL COMPANY,
Petitioner,

v.

UNITED STATES OF AMERICA, *et al.*,
Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Ninth Circuit

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BRIEF OF *AMICUS CURIAE* ASSOCIATION OF AMERICAN RAILROADS IN SUPPORT OF PETITIONERS

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November 24, 2008

WILSON-EPES PRINTING CO., INC. – (202) 789-0096 – WASHINGTON, D. C. 20002

ADH 47823

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INTEREST OF *AMICUS CURIAE* ASSOCIATION OF AMERICAN RAILROADS[1]

The Association of American Railroads ("AAR") is an incorporated, non-profit trade association representing the nation's major freight railroads. AAR members operate approximately 72% of the rail industry's line-haul mileage, produce 95% of its freight revenues, and employ 92% of rail workers. Amtrak, which carries virtually all intercity rail passenger traffic, is a member of AAR, as are several commuter railroads. In matters of significant interest to its members, AAR frequently appears before Congress, the courts and administrative agencies on behalf of the railroad industry, including by participating as *amicus curiae* in cases that raise issues of vital concern to its membership and the judicial system. AAR filed a brief in this case in support of the petition for certiorari.

This is a case of great concern to the proper administration of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9601 et seq. This is true both generally and as it particularly affects the railroad industry. For historical reasons, the Nation's railroads are exposed to substantial potential liability under this regime. Many of them possess large land holdings with unbroken fee title stretching back a century or more, which they hold as passive landowners, and which lessees and adjacent owners have polluted.

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[1] Pursuant to Supreme Court Rule 37.6, AAR states that no counsel for any party authored this brief in whole or in part and that no entity or person, aside from *amicus curiae*, its members, and its counsel, made any monetary contribution toward the preparation or submission of this brief. The parties have consented to the filing of this brief and letters reflecting their consent have been filed with the Clerk of Court.

The decision below threatens to impose untold liability on passive landowners, like these railroads, that Congress neither foresaw nor intended. Perversely, the decision below will make apportionment easier to obtain for truly culpable polluters, but leave passive landowners jointly and severally liable for cleanup costs for contamination in which they played no part and that did not even occur on their own land. The AAR submits this brief to explain why nothing in the law requires this bizarre result.

INTRODUCTION

As petitioners have thoroughly explained, the decision below radically departs from basic common-law principles that CERCLA did not displace. AAR submits this brief to supplement that submission with regard to two related issues that are fundamental to the error in the decision below.

First, the decision below represents a marked departure from basic principles of liability apportionment. CERCLA incorporates common-law principles in areas like this one where Congress did not speak, and the common law favors apportionment in circumstances like these. Both the Second and Third Restatements of Torts provide for apportionment among causes when there is any "reasonable basis" to do so. This well-accepted test reflects a long tradition of permitting apportionment upon even rough approximations of comparative causation, and particularly where multiple pollutants or polluters are involved. Indeed, the Restatements highlight pollution and public nuisance as circumstances in which apportionment is especially appropriate, and numerous common-law decisions over the past century and more have applied this accepted rule. The district court's well-reasoned and detailed apportionment

analysis falls squarely within this common-law tradition, and the Ninth Circuit's decision to overturn it is a substantial misstep that this Court should correct.

Second, not only is the Ninth Circuit's heavy bias against apportionment insupportable, it would have extraordinary and untoward practical repercussions for landowners who have done everything that could reasonably be expected of them. For while Congress plainly intended CERCLA to place burdens on certain classes of defendants, these burdens are not without limits. For instance, CERCLA combines a strict liability regime with a modified causation standard and retroactive liability – factors which, taken together, can result in massive cleanup costs. CERCLA thus works harsh effects on passive landowners, who "may be required to pay huge amounts for damages to which their acts did not contribute." *U.S. EPA* v. *Sequa Corp. (In re Bell Petroleum Servs., Inc.)*, 3 F.3d 889, 897 (5th Cir. 1993); see also *id.* (CERCLA often imposes "liability ... for conduct predating the enactment of CERCLA, ... even for conduct that was not illegal, unethical, or immoral at the time it occurred").

But the burdens imposed by the statute were not meant to be unlimited, and the Ninth Circuit erred in concluding that Congress intended such a result. There is no textual basis for concluding that CERCLA's already extreme exposure to liability should be multiplied by raising the bar for apportionment so high that joint and several liability for landowners is a near certainty. In no way does "the basic structure of the CERCLA statutory scheme" require that landowners bear these costs in full. *United States* v. *Burlington N. & Santa Fe Ry.*, 520 F.3d 918, 941 (9th Cir. 2008). The Ninth Circuit reached its conclusion only by mistakenly departing from basic common-law

rules, mistakenly inferring a supposed legislative purpose that landowners rather than taxpayers *always* should bear cleanup costs, and imposing evidentiary burdens that are unmeetable and have no statutory basis. This Court should reject the bald inequity embraced by the decision below, which does violence to the common-law principles that inform a proper reading of the statute.

ARGUMENT

I. COMMON-LAW PRINCIPLES FAVOR APPORTIONMENT IN CASES LIKE THESE.

A. CERCLA is silent on the proper method for apportioning damages among defendants, and so the lower courts have relied on "traditional and evolving common law principles," especially as reflected in the Restatements of Torts. See *In re Bell Petroleum Servs., Inc.*, 3 F.3d at 895; *United States* v. *Alcan Aluminum Corp.*, 315 F.3d 179, 185 (2d Cir. 2003); *United States* v. *Chem-Dyne Corp.*, 572 F. Supp. 802, 810 (S.D. Ohio 1983).[2] This approach derives from the basic rule that "in order to abrogate a common-law principle, the statute must speak directly to the question addressed by the common law." *United States* v. *Bestfoods*, 524 U.S. 51, 63 (1998) (internal quotation marks and alteration omitted). And, relevant here, the common law broadly authorizes the apportionment of damages based upon causation.

The familiar rule under the Second Restatement is that harm should be apportioned by cause when there is any "reasonable basis" to do so:

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[2] This Court has reserved the question whether CERCLA creates joint and several liability. *United States* v. *Atl. Research Corp.*, 127 S. Ct. 2331, 2339 n.7 (2007).

> Damages for harm are to be apportioned among two or more causes where
>
> (a) there are distinct harms, or
>
> (b) there is a *reasonable basis* for determining the contribution of each cause to a single harm.

Restatement (Second) of Torts § 433A(1) (1965) (emphasis added); see also *id.* § 881 cmt. a ("apportionment is made" for "harms ... that afford a reasonable basis for division"). The Third Restatement endorses the same rule, as do numerous standard authorities. See, *e.g.*, Restatement (Third) of Torts: Apportionment of Liability § 26(b) (2000) (damages to be divided by cause when there is a "reasonable basis" to do so); W. Page Keeton et al., *Prosser and Keeton on the Law of Torts* § 52, at 346, 350 (5th ed. 1984) ("entire liability is imposed only where there is no factual basis for holding that one wrongdoer's conduct was not a cause in fact of part of the harm" and "emphasis is placed on the possibility of reasonable apportionment"). The rule embodies simple justice: "No party should be liable for harm it did not cause ...." Restatement (Third) of Torts § 26 cmt. a.

Notwithstanding this basic common-law principle, the Ninth Circuit now requires "precision" in apportionment and detailed "records" to satisfy the burden of apportionment. 520 F.3d at 944. To apportion damages, however, it never has been essential that particular harms be capable of precise attribution to specific causes. Neither "precision" nor particular "records" ever have been thought necessary. *See id.* at 952 (Bea, J., dissenting) ("The panel applies CERCLA in a novel and unprecedented way to impose impossible-to-satisfy burdens on CERCLA defendants." (footnote omitted)).

Rather, it is well established that the proper question is whether "a factual basis can be found for some *rough practical apportionment*." Keeton et al., *supra*, § 52, at 345 (emphasis added); see also *id.* § 52, at 350 ("The difficulty of any complete and exact proof ... has not been regarded as sufficient justification for entire liability."). As the Third Restatement explains, "[a]s long as there is *some evidence* that would permit [apportionment], courts should permit the factfinder" to apportion damages. Restatement (Third) of Torts § 26 rptrs' note cmt. h (emphasis added); *id.* § 26 cmt. f ("The fact that the magnitude of each indivisible component cannot be determined with precision does not mean that the damages are indivisible. All that is required is a reasonable basis for dividing the damages.").

As the Fifth Circuit properly has explained in this very context:

> If the expert testimony and other evidence establishes a factual basis for making a reasonable estimate that will fairly apportion liability, joint and several liability should not be imposed in the absence of exceptional circumstances. The fact that apportionment may be difficult, because each defendant's exact contribution to the harm cannot be proved to an absolute certainty, or the fact that it will require weighing the evidence and making credibility determinations, are inadequate grounds upon which to impose joint and several liability.

In re Bell Petroleum Servs., Inc., 3 F.3d at 903.

B. These authorities reflect an abiding tradition in which common-law courts have permitted apportionment based on the fact-finder's approximation of relative causation. Presented with "evidence which rea-

sonably tends to show the relative proportion" of the tortfeasors' causal responsibility, *Eckman* v. *Lehigh & Wilkes-Barre Coal Co.*, 50 Pa. Super. 427, 432 (1911), courts "permit the jury, as reasonable men, to make from the evidence the best possible estimate," *Hill* v. *Chappel Bros. of Mont., Inc.*, 18 P.2d 1106, 1110 (Mont. 1932). As early as 1879, the Connecticut Supreme Court expressed a strong preference for apportionment – even rough apportionment – as more appropriate than the inherently inequitable alternative:

> It may be very difficult for a jury to determine just how much damage the defendant is liable for and how much should be left for the city to answer for; but this is no more difficult of ascertainment than many questions which juries are called upon to decide. They must use their best judgment, and make their result, if not an absolutely accurate one, an approximation to accuracy.... If the plaintiff is entitled to damages and the defendant liable for them, the one is not to be denied all damages, nor the other loaded with damages to which he is not legally liable, simply because the exact ascertainment of the proper amount is a matter of practical difficulty.

Sellick v. *Hall*, 47 Conn. 260, 274 (1879).[3]

Indeed, far from imposing rigid proof requirements like the specific historical records that the Ninth Circuit demanded here, 520 F.3d at 944, courts often

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[3] *Accord Harley* v. *Merrill Brick Co.*, 48 N.W. 1000, 1002 (Iowa 1891) ("the fact that it is difficult to measure accurately the damage which was caused by the wrongful act of each contributor to the aggregate result does not ... make any one liable for the acts of others"); *Chipman* v. *Palmer*, 77 N.Y. 51, 53-54 (1879).

have "relaxed the quality and quantity of evidence required to meet the burden of production." Restatement (Third) of Torts § 26 rptrs' note cmt. h. As Prosser explained in his seminal article:

> The difficulty of assessing separate damages ... is not regarded as sufficient justification for entire liability....
>
> ... It has been said that no very exact proof will be required, and that general evidence as to the proportion in which the defendants contributed to the result will be sufficient to support separate verdicts.

W. Prosser, *Joint Torts and Several Liability*, 25 Cal. L. Rev. 413, 438-39 (1937).[4]

The district court in the decision below far surpassed the "rough practical apportionment" or "best possible estimate" that common-law courts routinely have accepted as sufficient. It held a bench trial that stretched over multiple weeks, after which it entertained multiple motions to amend its findings of fact and conclusions of law. See *United States* v. *Atchi-*

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[4] *See also* W. Prosser, *Handbook of the Law of Torts* § 47, at 328, 334-35 (1st ed. 1941) (whenever "a logical basis [could] be found for some rough practical apportionment, which limits a defendant's liability to that part of the harm which he has in fact caused, it [could] be expected that the division [would] be made"); *Ogden* v. *Lucas*, 48 Ill. 492, 494 (1868); *Cal. Orange Co.* v. *Riverside Portland Cement Co.*, 195 P. 694, 695 (Cal. Ct. App. 1920) ("[t]hough in cases of this sort entire accuracy is impossible, and the difficulty of accurately proportioning and assessing the damage done by defendant's mill is great" "the trial court was at liberty to estimate as best it could, from the evidence before it, how much of the total damage caused by the operations of the two cement companies was occasioned by defendant's plant, and in doing so might measure with a liberal hand the amount of damage caused by defendant's mill").

son, Topeka & Santa Fe Ry., Nos. CV-F-92-5068 OWW, CV-F-96-6226 OWW, -6228 OWW, 2003 WL 25518047, at *1 (E.D. Cal. July 15, 2003). It ultimately issued a lengthy order that contained nearly 300 individual findings of fact, *id.* at *2-43, and engaged in a detailed apportionment analysis, in the course of which it evaluated the relative contributions of the various parcels of land, *id.* at *80-96; see No. 07-1601 Pet. 21-22. If this is a "'meat-axe'" approach, 520 F.3d at 944, the common law has been operating a butcher shop for more than a century.

C. Of particular relevance here, authorities long have recognized that environmental torts (and earlier, so-called "public nuisances") are particularly susceptible of apportionment See, *e.g.*, G. Boston, *Apportionment of Harm in Tort Law: A Proposed Restatement*, 21 U. Dayton L. Rev. 267, 301 (1996) ("[P]rinciples of comparative causation are especially relevant in the toxic torts area, where measures of toxicity can be applied to determine apportionment.") So, for instance, Prosser explains that

> [n]uisance cases, in particular, have tended to result in apportionment of the damages, largely because the interference with the plaintiff's use of land has tended to be severable in terms of quantity, percentage, or degree. Thus defendants who independently pollute the same stream, or who flood the plaintiff's land from separate sources, are liable only severally for the damages individually caused, and the same is true as to nuisances due to noise, or pollution of the air.

Keeton et al., *supra*, § 52, at 349 (footnotes omitted; citing numerous cases); Restatement (Second) of Torts § 433A cmts. c, d, illus. 5; *id.* § 881 cmt c., illus. 1, 2. Apportionment therefore repeatedly has been

used in cases closely analogous to this one, in which pollution by multiple tortfeasors harmed a plaintiff's person or property. *E.g.*, *Ralston* v. *United Verde Copper Co.*, 37 F.2d 180, 184 (D. Ariz. 1929), *aff'd*, 46 F.2d 1 (9th Cir. 1931); *Thomas* v. *Ohio Coal Co.*, 199 Ill. App. 50, 56-57 (1916); see also *Woodland* v. *Portneuf Marsh Valley Irrigation Co.*, 146 P. 1106, 1106-07 (Idaho 1915); *Harley v. Merrill Brick Co.*, 48 N.W. 1000, 1001-02 (Iowa 1891); *Chipman* v. *Palmer*, 77 N.Y. 51, 53-54 (1879); *Cal. Orange Co.* v. *Riverside Portland Cement Co.*, 195 P. 694, 695 (Cal. Ct. App. 1920); *Eckman*, 50 Pa. Super. at 432.

Courts in applying these common-law principles in the context of CERCLA have properly declined to set the bar anywhere near as high as the Ninth Circuit did in specifying what constitutes a "reasonable basis" for apportionment. The Sixth Circuit, for instance, has held that courts "should be receptive to any argument for divisibility that provides a reasonable basis" for apportioning harm. *United States* v. *Twp. of Brighton*, 153 F.3d 307, 320 (6th Cir. 1998). In line with the common-law authorities, the Fifth Circuit likewise has authorized apportionment on the basis of "a reasonable estimate." *In re Bell Petroleum Servs., Inc.*, 3 F.3d at 903.[5]

What is more, apportionment has been performed using precisely the factors that the district court relied upon here. The Ninth Circuit held that a "simple fraction based on the time that the Railroads owned the land cannot be a basis for apportionment." 520

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[5] *See also Dent* v. *Beazer Materials & Servs., Inc.*, 993 F. Supp. 923, 946 (D.S.C. 1995) (apportioning CERCLA damages among former owners by distinguishing types of hazardous products and applying causal analysis), *aff'd*, 156 F.3d 523, 530-31 (4th Cir. 1998).

F.3d at 945. Time, however, long has been recognized as an appropriate basis for apportioning pollution-based harms:

> The harm inflicted may be conveniently severable in point of time. Thus if two defendants, independently operating the same plant, pollute a stream over successive periods, it is clear that each has caused a separate amount of harm, limited in time, and that neither has any responsibility for the harm caused by the other.

Restatement (Second) of Torts § 433A cmt. c; Prosser, 25 Cal. L. Rev. at 434-45 (same; "[i]n such cases there is available a logical basis for the apportionment of the loss"). *Accord* Restatement (Third) of Torts § 26 rptr's note cmt. f.

In *In re Bell Petroleum Services*, likewise, the Fifth Circuit permitted CERCLA apportionment based on a combination of periods of ownership and evidence about what occurred during those periods. 3 F.3d at 903-04. The Sixth Circuit did as well in *Township of Brighton*. See 153 F.3d at 320 ("if [defendant] can show that it was only an operator after a particular year, and that only a certain percentage of the hazardous material was introduced into the property after that year, it can show divisibility and be held liable only for the releases occurring after it became an operator"); see also *United States v. Hercules*, 247 F.3d 706, 719 (8th Cir. 2001) (chronological evidence can prove divisibility of harm). That is closely analogous to what the district court did here. See No. 07-1601 Pet. 21; No. 07-1601 Pet. App. 253a.

Geography likewise supplies a reasonable basis for apportionment of CERCLA liability. See *Twp. of Brighton*, 153 F.3d at 320 (if an entity can show that its "activities were completely limited to a discrete

and measurable section of the property, and that the releases onto or from that section represented a discrete and measurable harm, this would provide a reasonable basis for apportionment"); *United States* v. *Burlington N. R.R.*, 200 F.3d 679, 700 (10th Cir. 1999) (affirming decision dividing credit for a settlement agreement that apportioned liability based on geography); see also *Kamb* v. *U.S. Coast Guard*, 869 F. Supp. 793, 799 (N.D. Cal. 1994) (apportioning based on geography and volume of contaminant).

D. The Ninth Circuit further departed from basic common-law principles when it demanded "records" evincing with "precision" highly particularized proof such as "the proportion of the amount of chemicals stored, poured from one container to another, or spilled on each parcel." 520 F.3d at 944. This extrastatutory rule not only would impermissibly favor direct evidence over circumstantial evidence, but indeed would require the use of a specific kind of direct evidence. Such an inflexible proof requirement runs contrary to the fundamental rule, embodied throughout the law, that any competent evidence will suffice. "[D]irect evidence of a fact is not required." *Michalic* v. *Cleveland Tankers, Inc.*, 364 U.S. 325, 330 (1960). On the contrary, it is a "conventional rule of civil litigation" that proof by "either direct or circumstantial evidence" is permissible. *Desert Palace* v. *Costa*, 539 U.S. 90, 99-100 (2003) (internal quotation marks and alterations omitted); *Merchs.' Mut. Ins. Co.* v. *Baring Bros. & Co.*, 87 U.S. 159, 161 (1873) ("[c]ompetent evidence may be ... direct or circumstantial"). And to "demand[] either direct evidence ... or else more substantial circumstantial evidence" improperly usurps the factfinder's duty and power to draw reasonable inferences from the evidence. *Gallick* v. *Balt. & Ohio R.R.*, 372 U.S. 108, 114 (1963).

Precisely because this basic rule holds true throughout the law, statutes and rules are specific when they depart from it by requiring particular forms of proof.[6] The examples of this are familiar. The statute of frauds and its statutory descendents require that certain contract terms be in writing. See, *e.g.*, Cal. Civ. Code § 1624(a) (conveyance of an interest in land requires a writing signed by the party to be charged). The best evidence rule requires that, "To prove the content of a writing, recording, or photograph, the original writing, recording, or photograph is required, except as otherwise provided in these rules or by Act of Congress." Fed. R. Evid. 1002. *Cf. alsc* U.S. Const. art. III, § 3, cl. 1 (requiring that treason be proved "on the Testimony of two Witnesses to the same overt Act, or on Confession in open Court").

CERCLA is no different: When Congress means to require specific proof under CERCLA, it does so expressly. This is true of the "innocent purchaser" defense, which exempts from liability defendants who purchased already-contaminated land, and did not know of and had no reason to know of the contamination. 42 U.S.C. §§ 9601(35)(A)(i), 9607(b)(3). In establishing this defense, Congress set forth detailed evidentiary requirements. For example, to establish the "no reason to know" element, the landowner must "demonstrate" that it conducted inquiries of, among other things, "historical sources, such as chain of title documents, aerial photographs, building department records, and land use records," "recorded environ-

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[6] *Cf. Bestfoods*, 524 U.S. at 62-63 (CERCLA incorporates common-law principles when Congress is silent); *Desert Palace*, 539 U.S. at 99 (declining to depart from conventional rules of civil litigation because, among other reasons, the statute was silent).

mental cleanup liens against the facility," and "government records, waste disposal records, underground storage tank records, and hazardous waste handling, generation, treatment, disposal, and spill records, concerning contamination at or near the facility." *Id.* § 9601(35)(B)(i), (iii)(III), (IV), (V).

That Congress imposed such requirements in certain provisions of CERCLA speaks volumes about its failure to do so elsewhere. And here, nothing in CERCLA's text imposes any particularized evidentiary requirement or burden to support apportionment. Nowhere does CERCLA demand the use of records like the Ninth Circuit sought here. See 520 F.3d at 958 & n.16 (Bea, J., dissenting). Nor does apportionment generally require any such specialized proof; if anything, common-law evidentiary burdens regarding apportionment are relaxed. See *supra* at 6-9.

Importantly, the special evidentiary requirement adopted by the Ninth Circuit was critical to its decision; it was only by establishing this standard that the court of appeals could hold categorically insufficient the evidence upon which the district court had relied, and so overturn the district court's reasonable apportionment. 520 F.3d at 936 n.18. This is because, as the Ninth Circuit properly recognized, the question of whether harm is apportionable in a particular case is a factual question that is reviewed only for clear error. *Id.* at 942; see Restatement (Second) Torts § 434(2) & cmt d. It therefore was squarely within the province of the factfinder – the district court judge who heard the evidence – to "draw reasonable inferences from basic facts to ultimate facts." *Jackson v. Virginia*, 443 U.S. 307, 319 (1979); *accord Reeves v. Sanderson Plumbing Prods., Inc.*, 530 U.S. 133, 150 (2000) ("drawing of legitimate inferences

from the facts" is the task of the factfinder (internal quotation marks omitted)). The Ninth Circuit could overturn the district court's thoughtful apportionment analysis only by holding that the evidence upon which it relied did not "suffice" as a matter of law. 520 F.3d at 943.[7] This conclusion amounts to nothing more than an evasion of the admittedly applicable standard of review. The district court apportioned damages only after a lengthy bench trial that resulted in hundreds of individual findings of fact and a carefully supported apportionment analysis. This manifestly was not clearly erroneous, and nothing in the law of apportionment or the rules of evidence prevented the district court from relying on the competent evidence that was before it as a reasonable basis for apportionment.

II. AN UNYIELDING APPLICATION OF JOINT AND SEVERAL LIABILITY WILL HAVE EXTRAORDINARY AND INEQUITABLE EFFECTS.

The Ninth Circuit's "unreasonable" apportionment standard, see *id.* at 953 (Bea, J., dissenting), has significant consequences for a category of defendants who already face exceptionally broad liability under the statute: landowners, including passive landowners who have in no way contributed to the need for cleanup. The decision below would multiply those harsh effects, in a way that "Congress did not ... intend." *Id.* The burden that would be placed on railroads exemplifies the draconian outcome that results from imposing vigorous and unyielding proof requirements for apportionment.

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[7] *See also* 520 F.3d at 945 ("many of the district court's conclusions were factually correct but legally insufficient").

A. Any discussion of CERCLA liability must begin with a recognition of the broad ways in which the statute imposes liability. First, liability is effectively strict. It affects four classes of parties including, relevant here, the current owner or operator of the facility, and one who, at the time of disposal, owned or operated the facility at which the hazardous substances were disposed of. 42 U.S.C. § 9607(a)(1), (2).[8] Parties who fall into these classes are commonly referred to as "potentially responsible parties," or "PRPs." The defenses available to PRPs are exceedingly limited – showing that the release from the facility was caused *solely* by an act of God, an act of war, or the act of a third party with whom the PRP had no direct or indirect contractual relationship. *Id.* § 9607(b). As a result – and while the statute never uses the actual words – courts have held that CERCLA imposes strict liability. See, *e.g.*, *United States* v. *Atl. Research Corp.*, 127 S. Ct. 2331, 2336 (2007); *Alcan Aluminum Corp.*, 315 F.3d at 184; *In re Bell Petroleum Servs., Inc.*, 3 F.3d at 897. At its most fundamental level, this means that a landowner can be held liable even if the tenant caused the disposal on the lessor's property, and even if all defendants exercised due care.

These results are exacerbated by the exceptionally broad manner in which EPA has purported to define the term "facility," which is a *sine qua non* of CERCLA liability for owners and operators. See generally 42 U.S.C. § 9607(a)(1), (2) (imposing liability on owners and operators of a "facility"). Much of the land owned by railroads that is at issue in this and similar

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[8] In addition, liability is imposed upon any person that arranged to dispose of its hazardous substances at the facility, and any transporter who delivered hazardous substances to the facility. 42 U.S.C. § 9607(a)(3), (4).

cases is made up of thin strips of property that, because of common-carrier obligations, are appurtenant to industrial facilities. CERCLA's statutory definition of facility is loose, see generally *id.* § 9601(9)(B), and EPA has in application defined facilities in sweeping ways that often do not track property ownership. See Pet. Br. 48-50; *e.g.*, *Quaker State Minit-Lube, Inc. v. Fireman's Fund Ins. Co.*, 52 F.3d 1522, 1524-25 (10th Cir. 1995). Simply put, EPA can sweep in an adjacent landowner that has engaged in no culpable conduct whatsoever merely by defining broadly the boundaries of a particular facility, and it has every incentive to do so when such a landowner is a solvent company with deep pockets.

Piling on to this harsh scheme, courts have held that a CERCLA plaintiff need not "establish a specific causal connection between [the] defendant's hazardous substances and the release or the plaintiff's incurrence of response costs." *United States v. Alcan Aluminum Corp.*, 964 F.2d 252, 264 (3d Cir. 1992); see *Amoco Oil Co.* v. *Borden, Inc.*, 889 F.2d 664, 670 n.8 (5th Cir. 1989). Furthermore, courts have concluded that CERCLA liability is retroactive – a PRP will be held responsible for cleanup costs stemming from conduct that predates enactment of the law in 1980. *Alcan Aluminum Corp.*, 315 F.3d at 188 (collecting cases).

The weight of this liability regime sits heaviest on the shoulders of the landowner. Unlike the categories of PRPs in (a)(3) and (a)(4), for instance – "arrangers" and "transporters" who may at least have had *some* role in disposal of the waste – the owner may be liable for wholly passive conduct – *i.e.*, doing nothing more than owning land that someone once polluted. The government's proof is reduced to the simple question of fee ownership, and absent any rea-

sonable form of apportionment, the owner is left "holding the bag." 520 F.3d at 941.

B. Railroads, which are quintessential passive landowners, serve as a vivid illustration of the extremely harsh manner in which these aspects of CERCLA operate. Due in large measure to the nature of their business, railroads possess substantial landholdings, much of which follows the 140,000 or more miles of right-of-way railroad track throughout the country. In the mid-19th Century, for instance, certain railroads (including predecessors to the petitioners here) received land grants from the federal government (in exchange for discounted hauling of federal freight, among other things) in order to facilitate national economic development. See generally *Leo Sheep Co.* v. *United States*, 440 U.S. 668, 670-77 (1979). These landholdings – many of which took the form of checkerboard parcels of land – are broadly geographically dispersed. See *id.* at 672.

The railroads often are, and they historically have been, passive landowners with regard to such parcels. In short, the railroads have thousands of lessees. AAR's members collectively have more than 75,000 land leases. One member railroad alone has 7800 land leases in 28 states, with (largely incomplete) records of an additional 28,000 known historical leases. Another member has more than 23,000 land leases, the majority of which are smaller than one acre. What is more, because much of this property is in proximity to rail lines, the railroads' lessees are often commercial and industrial concerns that require access to these transportation facilities.

For railroads, therefore, all of the harshest elements of CERCLA liability line up against them. They are fee owners of thousands of pieces of commercial and industrial property, with title stretching

back decades and beyond. (The railroad land grants, for instance, took place between 1850 and 1871.) The odds that one of those tenants spilled or disposed of hazardous substances are high, as is the possibility that the offending tenant is no longer in existence. For all of these reasons, CERCLA works particularly harsh effects on landowners like railroads.

C. That Congress contemplated these particular aspects of the CERCLA regime is clear. What is equally clear is that the strict evidentiary requirements imposed by the decision below find no support in CERCLA or in the common law. And, they would work extraordinary and inequitable hardship on railroads and other landowners like them. The Ninth Circuit rejected the district court's thoughtful apportionment among causes, and instead demanded evidence of "the proportion of the amount of chemicals stored, poured from one container to another, or spilled on each parcel." 520 F.3d at 944. For instance, it sought "adequate records" by which "to estimate the amount of leakage attributable to activities on the Railroad parcel, how that leakage traveled to and contaminated the soil and groundwater under the Arvin parcel, and the cost of cleaning up that contamination." *Id.*

It comes as no surprise that "none of this data is in the record," *id.*, because such data rarely exists. The panel recognized as much, conceding that "[i]t may well be that such information is, as a practical matter, not available for periods long in the past, when future environmental cleanup was not contemplated." *Id.* This is an understatement. Because CERCLA operates retroactively, it may impose massive liability on passive landowners whose title to landholdings stretches back a century or more, to a time when "future environmental cleanup" indeed "was not con-

templated." There would have been no cause for *anyone* to keep the records demanded by the Ninth Circuit – if such records ever existed – and certainly no cause to believe that a landowner/lessor would have a *lessee's* records of its activities.

The same is true for more recent activities as well, because commercial leases do not typically require tenants to retain and disclose the detailed records that the Ninth Circuit now demands. Much less do they require this for *adjacent* properties, as in this case. And therein lies the problem. The passive landowner is the least likely party to have access to any such detailed records that – if they ever were kept at all – belonged to the site operator. Of course, it is implausible to think that many (if any) commercial enterprises kept detailed records of spills or leaks in the years before modern environmental regulations required such information. And it is unthinkable that the lessor would have done so. The Ninth Circuit was totally at ease with this inequitable result. 520 F.3d at 945 ("The net result of our approach to apportionment of liability, consequently, may be that landowner PRPs, who typically have the least direct involvement in generating the contamination, will be the least able to prove divisibility."). But there is not one piece of evidence that Congress intended any such result.

D. Compounding the harm embodied in its core ruling embracing inflexible joint and several liability, the Ninth Circuit imposed special additional requirements on landowners. It held that whereas Restatement principles "work[] nicely" when "several defendants are all polluters themselves," a landowner can only "establish divisibility by demonstrating a reasonable basis for concluding that a certain proportion of the contamination did not originate on the

portion of the facility that the landowner owned at the time of the disposal." *Id.* at 937, 938. This inverts logic; it would place the greatest burden on the least culpable party, who also is the least likely to possess or control the information that the court now would demand.

Not only is this illogical; it is fundamentally inconsistent with the basic common-law principle that lessors are not usually held responsible for the actions of lessees. See Restatement (Second) of Torts § 355. The common law recognized that a lessee assumes the obligations of ownership, with few exceptions. And, of particular relevance here, lessors were not held liable for nuisances created by lessees unless the intended purpose of the lease would necessarily result in a nuisance. As Prosser explained, the lessor is "not responsible for activities to which he did not consent and which he had no reason to contemplate or expect, or for dangers created by the tenant which he has not authorized." W. Prosser, *Handbook of the Law of Torts* § 63, at 403 (4th ed. 1971) (footnote omitted).[9] Here, there is nothing in the record to reflect, nor any basis to believe, that by leasing land to an agricultural chemical storage and distribution facility, a nuisance necessarily would occur. As Holmes put it, "the landlord will not be liable for the use of the premises in such a way as to do harm, merely because there was a manifest possibility of their being

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[9] *Accord Edgar v. Walker*, 32 S.E. 582, 584 (Ga. 1899) ("As a general rule a landlord is not liable to third persons for any injury they sustain, occasioned by the wrongful act of his tenant in keeping the rented premises in a dangerous or unhealthy condition. The only exceptions to this rule are (1) When the landlord has contracted with the tenant, to repair; (2) when he has let the premises in a ruinous condition; (3) when he has expressly licensed the tenant to do acts amounting to a nuisance.").

used in such a way." *Clifford v. Atl. Cotton Mills*, 15 N.E. 84, 87 (Mass. 1888).[10]

Regardless of CERCLA's modification of the base common-law rule regarding liability, there is no justification for adopting a rule that landowner/lessors – who would not have been liable at all under the common law – now will be subject to special burdens when apportionment among causes is at issue. There is nothing in CERCLA to support the Ninth Circuit's notion that because the statute's liability regime is "expansive" in some regards, it is without limitation in all other respects. On the contrary, Congress did not make the statute expansive *in this regard*; it did not speak to this issue at all. 520 F.3d at 957 n.12 (Bea, J., dissenting). Through its silence, Congress "left it to the courts to fashion some rules that will, in appropriate instances, ameliorate this harshness." *In re Bell Petroleum Servs., Inc.*, 3 F.3d at 897.

The practical result of the Ninth Circuit's rule is that joint and several liability is a near certainty. Accordingly, any "orphan shares" attributable to defunct parties will become the responsibility of the remaining viable PRPs. In a case like this one, the railroad, whose only act was to lease its land, ends up jointly responsible for all cleanup costs, picking up the shares not only of former tenants that actually *caused* the problem, but potentially the shares of all nearby landowners whose land falls within EPA's definition of the "facility" on which disposals oc-

---

[10] Furthermore, contrary to the approach taken by the Ninth Circuit, even when a lessor is held liable, liability may be apportioned between the lessor and lessee. *E.g., Arthur Richards, Inc. v. 79th Fifth Ave. Co.*, 441 N.E.2d 1114 (N.Y. 1982)

curred.[11] An appropriate division of harm among PRPs, by contrast, provides some measure of proportionality. It does not in the normal situation exculpate a PRP entirely, and indeed in this case the district court's apportionment would leave the railroads responsible for millions of dollars in past and projected cleanup costs. See Pet. Br. 13 n.4. Reasonable apportionment simply holds out for the landowner the possibility that its final responsibility will in some measure reflect its relationship to the site. The decision below, by contrast, departs from common-law principles, imposes an unyielding and overwhelming form of liability that Congress never wrote into the statute, and would impose untold liability where it is entirely unfair.

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[11] The opportunity to seek contribution from other PRPs – held out by the Ninth Circuit as a means to blunt these inequities, 520 F.3d at 940-41, 945 – provides small comfort in these situations. Contribution allocates liability among viable PRPs. But when the landowner is one of the few (or only) viable PRPs, it takes on the orphan shares of defunct, culpable parties.

In fact, the government's practice of picking the easy targets further compounds the inequities. *See* Kathleen Segerson, Reason Found., Policy Study No. 187, *Redesigning CERCLA Liabilty: An Analysis of the Issues* § VI.B.1 (Apr. 1995), *available at* http://www.reason.org/ps187.html (government targets certain PRPs for expediency, particularly based on their ability to pay). Empowered by joint and several liability, the U.S. can sue the landowner and others whose liability is easily proved, shifting to those defendants the burden of prosecuting contribution actions against the PRPs, against whom recovery is far less likely, or indeed impossible.

CONCLUSION

For the foregoing reasons, the decision below should be reversed.

Respectfully submitted,

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15 12

Supreme Court, U.S.
FILED
NOV 24 2008
CLERK

Nos. 07-1607, 07-1601

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INTEREST OF *AMICI CURIAE*

The Chamber of Commerce of the United States of America (the "Chamber") is the world's largest business federation, representing an underlying membership of more than 3,000,000 businesses and organizations of all sizes. Chamber members operate in every sector of the economy and transact business throughout the United States, as well as in a large number of countries around the world. A central function of the Chamber is to represent the interests of its members in important matters before the state and federal courts, legislatures and executive branches. To that end, the Chamber files *amicus* briefs in cases that raise issues of vital concern to the nation's business community.

The American Chemistry Council ("ACC") represents the leading companies engaged in the business of chemistry. The business of chemistry is a $664 billion enterprise and accounts for ten cents of every dollar in U.S. exports.

The American Petroleum Institute ("API") is a nationwide, non-profit, trade association headquartered in Washington, D.C., that represents over 400 members engaged in all aspects of the petroleum and natural gas industry, including exploration, production, transportation, refining and marketing.

CropLife America ("CLA"), which was organized in 1933, is the nationwide not-for-profit trade organization representing the major manufacturers, formulators and distributors of crop protection and pest control products. CLA is headquartered in Washington, D.C. Its member companies produce, sell and distribute most of the active compounds used in crop protection products registered for use in the United States. CLA represents its members' interests by, *inter alia*, monitoring federal agency

regulations and agency actions and related litigation to identify issues of concern to the crop protection and pest control industry, and participating in such actions when appropriate.

The National Association of Manufacturers ("NAM") is the nation's largest industrial trade association, representing small and large manufacturers in every industrial sector and in all 50 states. NAM's mission is to enhance the competitiveness of manufacturers by shaping a legislative and regulatory environment conducive to U.S. economic growth and to increase understanding among policymakers, the media and the general public about the vital role of manufacturing to America's economic future and living standards.

The National Petrochemical & Refiners Association ("NPRA") is a national trade association that represents more than 450 companies who own or operate most U.S. refining capacity, as well as petrochemical manufacturers with processes similar to refiners. NPRA members supply consumers with a wide variety of products and services used daily in their homes and businesses. These products include gasoline, diesel fuel, home heating oil, jet fuel, lubricants and the chemicals that serve as "building blocks" in making everything from plastics to clothing to medicine to computers.

Certain members of the Chamber, ACC, API, CLA, NAM, and/or NPRA have been identified as potentially responsible parties at contaminated sites across the country pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601-9675 ("CERCLA"), and have participated in cleaning up many such sites. Moreover, many members of these associations are engaged in the manufacture and sale of chemicals and other products containing hazar-

dous substances and utilize common carriers to transport and deliver such products to their customers' facilities. Therefore, these *amici* and their respective members have a substantial interest in the federal courts' proper interpretation and application of the CERCLA "arranger" liability provision set forth in section 107(a)(3) of CERCLA, 42 U.S.C. § 9607(a)(3), as it relates to situations involving the sale of useful products. These *amici* are also significantly affected by and concerned about the standards adopted by the court below for determining when a defendant in a CERCLA cost recovery action may avoid the imposition of joint and several liability by demonstrating that there is a reasonable basis for apportioning the harm at a contaminated site.[1]

SUMMARY OF ARGUMENT

The Ninth Circuit's decision should be reversed for several reasons. First, the Ninth Circuit's decision widens the already broad net of CERCLA liability to encompass those who sell chemicals or other products in the ordinary course of business based on the assertion that such companies have somehow "arranged for the disposal" of their products at the same time they are delivering them to customers for use. Given the magnitude of the costs typically associated with cleaning up contaminated sites, the imposition of such costs on chemical manufacturers and suppliers places a significant burden on these manufacturers and suppliers. When coupled with the imposition of joint and several liability,

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[1] Pursuant to this Court's Rule 37.6, *amici* affirm that no counsel for any party has authored this brief in whole or in part, that no such counsel or party made a monetary contribution to fund the preparation or submission of this brief, and that no person other than *amici* and their counsel made such a monetary contribution. The parties' letters consenting to the filing of this brief have been filed with the Clerk's office.

the result can be that a mere seller of a product could be forced to pay the entire cost of cleaning up a site — which in many cases would amount to tens of millions of dollars — to which its product was delivered if any of that product was spilled, even if the spillage was caused by the buyer. Such a result can hardly be said to be in accord with the "polluter pays" principle.

Congress's intent is evident from the plain language of the statute and the Ninth Circuit's decision cannot be reconciled with that language. The statute provides for liability under section 107(a)(3) of CERCLA, 42 U.S.C. § 9607(a)(3), where a party has "arranged for the disposal" of a hazardous substance. The Ninth Circuit focused on the breadth of the term "disposal" under CERCLA, *id.* § 9601(29), but treated the term as if it were untethered from the remainder of the statutory provision. It thus failed to recognize that in order to be liable under section 107(a)(3) a party must *arrange for* disposal. As other circuits have recognized, determining whether a party has arranged for disposal requires an analysis of the purpose of the transaction and the intent of the seller. Simply put, a party that arranges to sell or transport its products does not "arrange for disposal" of its products. It arranges for disposal of its products only if it intends or desires the products to be disposed of.

The Ninth Circuit's decision also is inconsistent with numerous CERCLA cases involving sales of useful products. The courts have generally held that where the purpose of the transaction was the sale of a useful product, the seller of the product is not liable as an "arranger." The Ninth Circuit suggested that these cases are distinguishable but its opinion in fact represents a significant departure from prior case law — holding a seller of new, ready-to-use pesticides liable for

the cleanup of spills of such pesticides even if the spill occurred at the buyer's facility on the buyer's watch.

The Ninth Circuit's decision in this respect will impose substantial and unwarranted burdens on manufacturers and suppliers of pesticides and a wide variety of other products. The decision will increase the cost of doing business for such suppliers and threatens to disrupt longstanding relationships between suppliers and their customers as they struggle to address and allocate the sizable risks the Ninth Circuit has imposed on ordinary commercial conduct involving sales of products. The Ninth Circuit's decision will also upset relationships between suppliers and the common carriers that deliver their goods. As a result, the Ninth Circuit's decision has the potential to adversely affect the flow of useful products across the U.S., particularly products that are transported by common carrier.

The Court also should reverse the Ninth Circuit's ruling regarding the standard for apportionment of harm under section 107 of CERCLA. The heightened evidentiary standards established by the Ninth Circuit for demonstrating that there is a basis for apportioning harm are inconsistent with the standards set forth in the Restatement (Second) of Torts, which the Ninth Circuit purported to use as a basis for its approach. The Ninth Circuit's evidentiary requirements also are inconsistent with the approach adopted by other circuits, which accords more closely with the Restatement.

The Ninth Circuit's standards will make it more likely that parties with minimal responsibility for the contamination at a site will nevertheless be required to pay the entire cost of a cleanup of a site. That result is in no respect mandated by the statute and ignores the concerns expressed by Congress in developing the

CERCLA liability scheme. Such a result is also fundamentally unfair, particularly in light of the substantial costs of cleaning up many contaminated sites. The Ninth Circuit approach will unfairly penalize companies that are careful to minimize the extent to which they are involved in any activities that may result in pollution, imposing joint and several liability on those parties with even a minimal connection to site contamination. This approach should be rejected by the Court.

I. THE NINTH CIRCUIT'S DECISION ERRONEOUSLY EXPANDS THE SCOPE OF CERCLA "ARRANGER" LIABILITY TO ENSNARE INNOCENT SELLERS OF USEFUL PRODUCTS

A. The Ninth Circuit's Ruling Subjects a Mere Seller of Useful Products to CERCLA Liability Absent Any Showing That the Seller Intended to Arrange for the Disposal of Hazardous Substances

The decision below erroneously expands the scope of CERCLA "arranger" liability by failing to properly consider Shell's underlying intent in entering into the relevant sales transactions with Brown & Bryant ("B&B"). The Ninth Circuit essentially ruled that a seller of useful products — Shell — was subject to CERCLA "arranger" liability for the inadvertent and unintended leakage of some of the product (a pesticide) during its transfer from the common carrier's tank trucks to the buyer's storage tanks at the buyer's facility. In doing so, the Ninth Circuit misconstrued the language of the statute.

CERCLA provides, in relevant part, that an "arranger" is a "person who by contract, agreement, or otherwise arranged for disposal or treatment, or

arranged with a transporter for transport for disposal or treatment, of hazardous substances . . . ." 42 U.S.C. § 9607(a)(3). The Ninth Circuit rationalized that it was not necessary to consider Shell's underlying intent in selling its products to B&B because CERCLA defines the term "disposal" to include "such unintentional processes as 'leaking.'" Pet. App. 44a.[2] Without considering the meaning and effect of the related statutory phrase "arranged for," the Ninth Circuit concluded that the "'disposal' need not be purposeful" for purposes of imposing CERCLA "arranger" liability upon a seller for its sale of a useful product. *Id.*[3] As a result, the Ninth Circuit summarily concluded that "an entity [such as Shell] can be an arranger even if it did not intend to dispose of the product." *Id.*

That analysis is incorrect. As the nine judges who dissented from the denial of a rehearing *en banc* explained, the term "disposal" cannot be considered in isolation but must be read in the context of the entire statutory provision. "[E]ven though the definition of 'disposal' may include unintentional practices, mere 'disposal' does not constitute *arranger* liability." Pet. App. 70a. Rather, under the express terms of section 107(a)(3) of CERCLA "arranger liability requires the defendant to have 'arranged for' such *disposal* (not just arranged for the sale)" and "[t]his connotes an intentional action toward achieving the purpose: disposal." *Id.* (*citing* Webster's Third New International Dictionary 120 (1993) (defining

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[2] "Pet. App." refers to the appendix filed by petitioner Shell Oil Company in No. 07-1607.

[3] Neither of the two court decisions cited by the Ninth Circuit in support of its conclusion — *Carson Harbor Village Ltd. v. Unocal Corp.*, 270 F.3d 863 (9th Cir. 2001), and *United States v. CDMG Realty Co.*, 96 F.3d 706 (3rd Cir. 1996) — concerned an interpretation of section 107(a)(3) of CERCLA.

"arrange" as "to make preparations for")) (emphasis in original). Thus, absent any intent on the part of the seller to dispose of hazardous substances, the mere possibility that leakage of some of the product may occur during the transfer to B&B's storage tanks "cannot mean that Shell, as a seller, *arranged for* such leakage." Pet. App. 71a.

Numerous circuits have applied the well-established "intent" factor to determine whether a seller of a "product" should be subject to CERCLA "arranger" liability under section 107(a)(3). *See, e.g., Freeman v. Glaxo Wellcome, Inc.*, 189 F.3d 160 (2d Cir. 1999) ("*Freeman*"); *Pneumo Abex Corp. v. High Point, Thomasville & Denton R.R. Co.*, 142 F.3d 769 (4th Cir. 1998) ("*Pneumo Abex*"); *United States v. Cello-Foil Products, Inc.*, 100 F.3d 1227 (6th Cir. 1996) ("*Cello-Foil*"); *Amcast Indus. Corp. v. Detrex Corp.*, 2 F.3d 746 (7th Cir. 1993) ("*Amcast*"); *AM International, Inc. v. International Forging Equipment Corp.*, 982 F.3d 989 (6th Cir. 1993) ("*AM Int'l*"); *Florida Power & Light Co. v. Allis Chalmers Corp.*, 893 F.2d 1313 (11th Cir. 1990) ("*Florida P & L*"). These cases make clear that the purpose of the transaction plays an essential role in CERCLA "arranger" liability determinations.

For example, in *Cello-Foil* the Sixth Circuit stated that "[n]otwithstanding the strict liability nature of CERCLA, it would be error for us not to recognize the indispensable role that state of mind must play in determining whether a party has 'otherwise arranged for disposal . . . of hazardous substances.'" 100 F.3d at 1231. The court observed that the phrase "otherwise arranged for disposal" "embrace[s] a concept similar to those of 'contract' or 'agreement.'" *Id.* Therefore, it is essential for the court to inquire into "what the parties had in mind with regard to the disposition of the hazardous sub-

stance" because "including an intent requirement into the 'otherwise arranged' concept logically follows the structure of the arranger liability provision." *Id.* The inquiry regarding "what the parties had in mind" necessarily must focus on the purpose of the transaction, *i.e.*, was it a sale of a useful product or the disposal of waste or other unwanted material. The Ninth Circuit erred in departing from that analysis here.

B. Properly Construed, the CERCLA "Arranger" Liability Provision Precludes the Imposition of Liability on Shell Because of Shell's Underlying Intent With Respect to the Sales Transactions

If the Ninth Circuit had properly considered Shell's underlying intent in its sales of pesticide to B&B, Shell would not be subject to CERCLA liability. Simply put, the record is devoid of evidence that Shell intended to arrange for disposal of hazardous substances. The record amply establishes that Shell entered into the transactions with B&B to sell a product that it had purposely manufactured for sale as a useful product because it had value and a marketplace of customers, such as B&B. The pesticide purposely manufactured and sold by Shell to B&B was one of Shell's principal business products, not a waste or byproduct which had no value and had to be disposed of. There is no evidence in the record that Shell had any intent to dispose of this product at B&B's facility or anywhere else.

Moreover, the substantial safety precautions that Shell undertook in order to ensure that its product was properly delivered to B&B's facility and transferred to B&B's storage tanks belie even an inference that Shell had any "intent" to arrange for the disposal of hazardous substances at B&B's facility. The record evidence shows that: (1) Shell contracted with a common carrier utilizing

suitable tanker trucks to transport and deliver the product to B&B's facility; (2) Shell provided B&B with a rebate for improvements in B&B's bulk handling and safety facilities and required an inspection of such facilities by a qualified engineer; and (3) Shell distributed a manual and created a checklist of the manual's requirements to ensure that the product tanks at B&B's facility were being operated in accordance with appropriate safety requirements. Pet. App. 47a. These actions underscore the lack of any intent on Shell's part to arrange for the disposal of its products at the very time it was delivering those products to B&B for productive use.[4]

Despite the dearth of evidence that Shell had any intent to arrange for the disposal of hazardous substances at B&B's facility, the Ninth Circuit imposed CERCLA "arranger" liability on Shell. The Ninth Circuit acknowledged that intent is a relevant consideration in what it termed "direct arranger liability" cases but argued that there is a separate category of cases — which it labeled "broader arranger cases" — in which intent is not controlling and is not even a particularly useful concept. In these cases, according to the Ninth Circuit, arranger liability is imposed where disposal of hazardous wastes is a foreseeable byproduct of, but not the purpose of, the transaction giving rise to liability. Pet. App. 42a.

However, to the extent such "broader arranger" liability has been recognized by other circuits, *see, e.g.*,

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[4] Indeed, the record shows that the total amount of Shell product that leaked or spilled during transfer operations at the B&B facility was less than one-tenth of one percent (*i.e.*, 81 gallons spilled per year of a total amount of 122,930 gallons delivered per year, or 0.07 percent). Pet. App. 257a.

United States v. Aceto Agric. Chem. Corp., 872 F.2d 1373 (8th Cir. 1989) ("*Aceto*"); *GenCorp, Inc. v. Olin Corp.*, 390 F.3d 433 (6th Cir. 2004), no court of appeals had ever extended it to cases involving the sale of useful products such as occurred here. Rather these cases have involved situations such as manufacturing — not sales — of products.[5] For example, in *Aceto* the Eighth Circuit upheld a district court's denial of a motion to dismiss claims against a pesticide manufacturer for costs incurred by the U.S. Environmental Protection Agency ("EPA") in cleaning up contamination at a facility operated by a company that was formulating pesticide products for the manufacturer. The court found that the U.S. had stated a claim for "arranger" liability where the manufacturer supplied the formulator with the materials to be used in the formulation process, retained title to the materials throughout that process, and was aware that disposal of hazardous substances was an inherent part of the formulation process. 872 F.2d at 1379-82.

In contrast, in cases involving sales of useful products, disposal is the antithesis of the seller's goal, which is to get all of its product into the buyer's hands for beneficial use. For that reason, the courts have generally required at least some evidence that a party intended to dispose of hazardous substances found in the material being sold before imposing liability on the seller. *See, e.g.*, *Amcast*, 2 F.3d at 51 (the words "arrange for" imply intentional

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[5] The cases cited by the Ninth Circuit as examples of this broader arranger liability do not involve the imposition of CERCLA liability on sellers of useful products such as Shell. For example, in *Florida P&L*, the court acknowledged the possibility that a manufacturer could be liable for contamination caused by its products but refused to impose liability on a manufacturer of transformers where there was no evidence that the transactions in question involved anything more than a sale of goods. 893 F.2d at 1318-19.

action); *Pneumo Abex*, 142 F.3d at 775-76 (refusing to hold railroads liable as "arrangers" where they did not intend their sales of used bearings to be an arrangement for disposal of hazardous substances). The Ninth Circuit acknowledged that Shell manufactured and sold B&B "a useful product," and that in accordance with the "useful product doctrine" the Ninth Circuit previously "had refused to hold manufacturers liable as arrangers for selling a useful product containing or generating hazardous substances that *later* were disposed of." Pet. App. 45a (*citing 3550 Stevens Creek Assocs. v. Barclays Bank of Cal.*, 915 F.2d 1355, 1362-65 (9th Cir. 1990)). The Ninth Circuit nevertheless attempted to distinguish these other "useful product cases" as inapplicable "where, as here, the sale of a useful product necessarily and immediately results in the leakage of hazardous substances." Pet. App. 45a. The Ninth Circuit therefore held that the "useful product doctrine" was not applicable to the leaked product "that never made it to the fields for its intended use but was disposed of prior to use." Pet. App. 46a-47a.

That purported distinction finds no basis in the "useful product" defense as interpreted by the other circuits. The applicability of that defense has turned on a variety of factors such as whether the material sold was usable in its existing form or required further processing to remove hazardous substances. *See, e.g., Pneumo Abex*, 142 F.3d at 775.[6] However, the courts outside the Ninth Circuit have never looked to the timing of the disposal of hazardous substances associated with a product as being

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[6] There is no question in this case that, unlike materials such as spent batteries, the chemicals that Shell sold to B&B were intended to be used in the form in which they were sold and did not require further processing prior to use.

relevant to the application of the "useful product" defense. Indeed, such considerations have been effectively rejected. *See Amcast*, 2 F.3d at 751. The Ninth Circuit's opinion therefore undermines the "useful product" defense and further expands the already broad net of CERCLA liability to ensnare innocent sellers of pesticides and other goods that have no intent to dispose of any hazardous substances but are merely selling their goods in the ordinary course of business.

C. Decisions from Other Circuits Properly Applying the "Intent" Factor in the "Sale of Useful Product" Context Underscore the Ninth Circuit's Error

The Ninth Circuit's decision to disregard Shell's underlying intent with respect to its sales of useful product to B&B in determining whether Shell was subject to CERCLA "arranger" liability is facially inconsistent with numerous decisions from other circuits, which uniformly deemed the underlying "intent" of the parties with respect to the relevant transactions an essential factor to consider. In *Amcast*, for example, the Seventh Circuit refused to impose arranger liability in circumstances nearly identical to the circumstances here. In that case, the seller employed a common carrier to deliver its liquid chemical product to a customer's facility. On occasion, the common carrier would spill some of the product during transfer to the customer's storage tanks, resulting in contamination of the groundwater at the facility. 2 F.3d at 747-48. However, in contrast to the Ninth Circuit's decision, in *Amcast* the Seventh Circuit properly applied the traditional "intent" test in the context of the "sale of useful product" defense and held that the seller was not subject to CERCLA "arranger" liability:

> [Seller] hired a transporter, all right, but it did not hire it to spill [product] on [the Buyer's] premises. Although the statute defines disposal to include spilling, the critical words for present purposes are "arranged for." The words imply intentional action. The only thing that [Seller] arranged for [the common carrier] to do was deliver [product] to [Buyer's] storage tanks. It did not arrange for spilling the stuff on the ground.

Amcast, 2 F.3d at 751. The Seventh Circuit thus concluded that "when the shipper is not trying to arrange for the disposal of hazardous wastes, but is arranging for the delivery of a useful product, he is not a responsible person within the meaning of the [CERCLA] statute." *Id.*

Decisions of the Second, Fourth, Sixth and Eleventh Circuits properly considering the "intent" factor in cases involving the sale of useful products further highlight the nature of the Ninth Circuit's error. For example, in *Freeman* the Second Circuit addressed the liability of a pharmaceutical company that sold chemical reagents to a buyer of chemical intermediates. The buyer later stored the reagents at its facility. EPA eventually concluded that there had been a release or threatened release of hazardous substances from the buyer's facility that required a CERCLA cleanup. 189 F.3d at 162. The Second Circuit ruled that the pharmaceutical company that had sold the chemical reagents was not subject to CERCLA "arranger" liability because the underlying intent of the transaction was a mere sale of a useful product. "[I]t is uncontroverted," the Second Circuit stated, "that [the pharmaceutical company] merely sold unused chemicals that it would ordinarily use in its laboratories to [the buyer] so that [the buyer] could use or resell them . . . ." *Id.* at 164.

Pneumo Abex is similar. That case involved a railroad which had sold used journal bearings to a foundry for processing into new bearings. The Fourth Circuit ruled that the railroad was not subject to CERCLA "arranger" liability because the intent of the railroad was to sell a valuable product, not to dispose of unwanted material or waste. *Pneumo Abex*, 142 F.3d at 775-76. In so ruling, the Fourth Circuit noted that "[t]he Foundry paid the [railroad] for the bearings; the [railroad] did not pay the Foundry to dispose of unwanted metal." *Id.* at 775. *See also AM Int'l*, 982 F.2d at 992 ("[l]iability only attaches to parties that have 'taken an affirmative act to dispose of a hazardous substance . . . as opposed to convey a useful substance for a useful purpose"); *Florida P & L*, 893 F.2d at 1315 (no evidence "that the manufacturers intended to otherwise dispose of hazardous waste when they sold the transformers").

Thus every circuit to have considered this issue other than the Ninth Circuit has required an intent to dispose as a precondition to "arranger" liability under section 107(a)(3) of CERCLA where the defendant merely engaged in the sale of a useful product, a precondition rejected by the Ninth Circuit. The Ninth Circuit thus did not merely depart from the statute's text. It departed from the settled understanding of every other court of appeals.[7]

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[7] In its brief in opposition to the petitions for certiorari, the United States essentially ignored this "intent" requirement, choosing to focus instead solely on the involvement of Shell in the process of delivering pesticides to the B&B facility. *See* Brief For the United States in Opposition at 15-17. This myopic approach to "arranger" liability cannot be squared with the language of the statute.

D. The Ninth Circuit's Ruling Threatens to Undermine the Well-Recognized "Sale of Useful Product" Defense That Suppliers Have Come to Rely Upon

The Ninth Circuit's decision threatens to undermine the well-recognized "sale of useful product" defense that suppliers of useful products have come to rely upon. Over the past two decades the circuits have established some level of uniformity with respect to the proper interpretation and application of the CERCLA "arranger" liability provision in the "sale of useful product" context. This uniformity is in no small measure due to the circuits' consistent acknowledgement of the essential nature of the "intent" inquiry and the concomitant premise that a supplier which merely intended to sell a product and not dispose of hazardous substances should not be subject to CERCLA "arranger" liability. The consistency among the circuits resulted in a "sale of useful product" defense that has provided suppliers of pesticides and other products containing hazardous substances with some assurance that they would not be subject to CERCLA "arranger" liability if the intent of their transactions was the mere sale of a useful product.

However, the Ninth Circuit's wholesale disregard of this well-established "intent" inquiry threatens to undermine the "sale of useful product" defense, eroding the degree of certainty and protection that it has provided suppliers of chemicals and other products. With the Ninth Circuit's decision, the gray area of the CERCLA "arranger" liability provision has now enveloped mere sales of useful products; under that decision the sale of useful products may qualify as an arrangement for disposal of hazardous substances if, for example, unintentional and inadvertent leakage of some

of the product occurs while the common carrier and the buyer transfer the product to the buyer's tanks. As a result of the Ninth Circuit's decision, every sale and delivery of a useful product could potentially subject the supplier to crippling CERCLA liability if any leakage occurs. While the web of CERCLA liability is necessarily far-reaching to effectuate the purposes of the statute, it is quite evident that CERCLA was never intended to ensnare innocent suppliers who harbored no intent to dispose of hazardous substances in conducting their sales of useful products.

A recent federal district court case applying the Ninth Circuit's ruling demonstrates its far-reaching effects. In *United States v. Lyon*, No. CV F 07-0491 LJO GSA, 2007 WL 4374167 (E.D. Cal. Dec. 14, 2007), EPA sued the owners of a dry cleaning establishment to recover costs incurred and to be incurred in cleaning up perchlorethylene ("PCE") contamination resulting from the dry cleaning operations. The owners filed a claim for contribution under CERCLA against a number of PCE manufacturers. Those manufacturers were not alleged to have had any direct contact with the owners of the dry cleaning shop or any authority or control over the disposal of PCE by the owners. Nevertheless, the district court — citing the Ninth Circuit's decision — declined to dismiss the claims against the PCE manufacturers based simply on an allegation that leakage of PCE was somehow inherent in the process of transferring PCE to the dry cleaning establishment and that the manufacturers somehow had knowledge of and control over the transfer process. *Id.* at *5. Thus, chemical manufacturers that had no contact with the ultimate purchasers of their products have now been enmeshed in what will undoubtedly be expensive CERCLA litigation based on the Ninth Circuit's opinion.

II. THE NINTH CIRCUIT'S STANDARDS FOR APPORTIONMENT OF HARM ARE OVERLY RESTRICTIVE AND PRODUCE HIGHLY INEQUITABLE RESULTS

The Ninth Circuit's decision also must be reversed because the barriers it erected to demonstrating apportionment of harm are inconsistent with the Restatement standards the court purported to follow and create the kind of harsh results and unfairness that Congress intended to avoid. The Ninth Circuit acknowledged that the imposition of joint and several liability is not mandatory and that apportionment is available in appropriate circumstances. Pet. App. 12a-13a. Moreover, the Ninth Circuit agreed with other courts that (i) the standards for determining when harm may be apportioned in CERCLA cases are drawn from Section 433A of the Restatement (Second) of Torts and that (ii) harm may be apportioned where there is a reasonable basis for divisibility of a single harm or where there are distinct harms. *Id.* at 16a.

However, the Ninth Circuit's application of these principles puts it at odds with the Restatement and other courts of appeals that have applied the Restatement approach in the CERCLA context.[8] In particular, the Ninth Circuit imposed standards of proof that are not required to establish a *reasonable* basis for apportionment and that will be impossible to meet in most instances. For example, the Ninth Circuit held that in order for the Railroads to establish that the harm attributable to them as owner of a parcel that B&B

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[8] As the dissent to the denial of petition for rehearing *en banc* noted, "although the panel's amended opinion pays lip service to the Restatement test, the panel then proceeds effectively to disregard it." Pet. App. 53a.

leased for a portion of its operations, the Railroads would have had to keep records that would allow a comparison of the amount of chemicals stored on the Railroad parcel and the amount stored on B&B's own property, the amounts of chemicals transferred between containers and the amounts of chemicals actually spilled on each parcel. *Id.* at 34a. The Ninth Circuit imposed these requirements even though it recognized that the kind of records it demanded "would have had little utility to B&B ... and none to the Railroads...." *Id.* Moreover, the Ninth Circuit required a particular kind of evidence to justify apportionment — records of chemical storage, transfer and release — even though the Restatement simply requires evidence without limiting the nature of the evidence that could support divisibility.

At the same time, the Ninth Circuit rejected various factors that were used by the trial court in establishing a reasonable basis for divisibility of the harm at the site, such as the period during which the Railroad parcel was leased for use in B&B's operations as compared to the total period of B&B's operations and the proportion of the parcel owned by the Railroads to the total area of the site. The Ninth Circuit concluded that these factors were inadequate to support apportionment because they were "simple"[9] and allegedly did not take into account the "dynamic nature" of B&B's operations, Pet. App. 31a-34a, even though the district court concluded after a detailed and careful review of the evidence that the use of these factors was warranted and in fact conservative because if anything they tended to overstate the amount

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[9] These factors are no more simple than the factors endorsed in the comments to the Restatement, such as the relative number of cows owned by a defendant. Restatement (Second) Torts, § 433A, comment d.

of contamination that could be attributed to the use of the Railroad parcel, *id.* 254a-255a.

A. The Ninth Circuit's Approach to Apportionment Is Inconsistent with the Restatement and Precedent

The Ninth Circuit's approach to apportionment is inconsistent with the Restatement. Section 433A of the Restatement provides that damages for harm can be apportioned among two or more causes where there is a reasonable basis for determining the contribution of each. The comments to Section 433A indicate that apportionment of distinct harms may be made based on a "rough estimate" that will "fairly apportion" the damages, that a single harm may be divisible if there is a "reasonable and rational basis" which results in a fair apportionment and that "reasonable assumptions may be used." Restatement (Second) of Torts, § 433A, comments (b), (d) (1965). Likewise, Dean Prosser (who served as the Reporter for the Second Restatement) states that where there is a basis for a "rough practical apportionment," it is likely that such apportionment will be made. W. Page Keaton, *et al.*, *Prosser and Keaton on the Law of Torts* 345 (5th ed. 1984). Thus, the thrust of the common law approach around the time of CERCLA's enactment in 1980 was to apportion damages if there was a rough but rational way of doing so which achieved a result that was generally fair.[10] The courts applied the Restatement approach accordingly. *See, e.g., Federal Savings & Loan Ins. Corp. v. Reeves*, 816 F.2d 130, 135-36 (4th Cir. 1987); *Fidelity Savings & Loan Ass'n v.*

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[10] The Court has noted that the state of the law at the time a statute was enacted is the most important consideration in determining what common law liability concepts are incorporated in a statute. *Norfolk & Western Ry. Co. v. Ayers*, 538 U.S. 135, 164 (2003).

Aetna Life & Casualty Corp., 440 F. Supp. 862, 875-76 (N.D. Cal. 1977), *aff'd*, 647 F.2d 933 (9th Cir. 1981). *See also Sauer v. Burlington Northern R. Co.*, 106 F.3d 1490, 1494 (10th Cir. 1996) (rejecting the argument that apportionment of injury had to be precise and holding that apportionment need not be proven with mathematical precision or great exactitude but requires only evidence sufficient to "permit a rough practical apportionment").

A number of circuits have adopted this approach in the CERCLA context. For example, the Fifth Circuit in *U.S. Environmental Protection Agency v. Sequa Corp. (In re Bell Petroleum Serv., Inc.)*, 3 F.3d 889 (5th Cir. 1993), held that joint and several liability should not be imposed under section 107 of CERCLA if the evidence establishes a factual basis for making a reasonable estimate that will fairly apportion liability. The court stated that the "fact that apportionment may be difficult, because each defendant's exact contribution to the harm cannot be proved to an absolute certainty, or the fact that it will require weighing the evidence and risking credibility determinations, are inadequate grounds upon which to impose joint and several liability." *Id.* at 903. In fact, the court concluded that "evidence sufficient to permit a rough approximation is all that is required under the Restatement." *Id.* at 904 n.19. The court held that liability should be apportioned in the case before it because there was "sufficient evidence from which a reasonable and rational approximation of each defendant's individual contribution to the contamination can be made." *Id. See also United States v. Township of Brighton*, 153 F.3d 307, 320 (6th Cir. 1998) (district court should be receptive to any argument for divisibility that provides a reasonable basis for distinguishing between the harm caused by the Township and the harm caused

by others); *Coeur d'Alene Tribe v. ASARCO, Inc.*, 280 F. Supp. 2d 1094 (D. Idaho 2003) (Restatement does not require "fingerprinting" of each defendant's hazardous wastes; apportionment of harm at mining site based on estimate of volume of mine tailings produced by each defendant was not perfect but was reasonable based on the facts of the case).

B. Apportionment in This Case Would Be Consistent With the Policies Underlying CERCLA

It is evident that the Ninth Circuit adopted its parsimonious approach to apportionment because of policy considerations, *i.e.*, to ensure that "the taxpayers are not left holding the tab." Pet. App. 35a. While the "polluter pays" principle is by now a familiar one and it is one of the goals that CERCLA is designed to achieve, this Court has acknowledged that no statute pursues its goals at all costs. *Rodriguez v. United States*, 480 U.S. 522, 525-26 (1987) (*per curiam*) (it frustrates rather than effectuates congressional intent to assume that whatever furthers the statute's primary objective must be the law). Acts of Congress are usually the result of compromise among competing goals and "[c]ourts and agencies must respect and give effect to these sorts of compromises." *Ragsdale v. Wolverine World Wide, Inc.*, 535 U.S. 81, 94 (2002). *See also Board of Governors of Fed. Reserve System v. Dimension Fin. Corp.*, 474 U.S. 361, 374 (1986) (invocation of purposes of legislation which takes no account of process of legislative compromise prevents the effectuation of congressional intent). This is certainly true of CERCLA; in fact, this Court has previously recognized that CERCLA reflects an accommodation of several competing policy concerns, including concerns about the potential impacts of the statute on the petrochemical industry. *See Exxon Corp. v. Hunt*, 475 U.S. 355, 371-72 (1986).

One of the concerns of Congress was the potentially harsh impacts of joint and several liability in some cases, which ultimately led Congress to delete any specific reference to joint and several liability in the statute. During the floor debates on the statute, Senator Helms noted that the potential inclusion of joint and several liability in the Act "received intense and well-deserved criticism from a number of sources, since it could impose financial responsibility on persons who contributed only minimally (if at all) to a release or injury." 126 Cong. Rec. at S15004 (Nov. 24, 1980). *See also United States v. Alcan Aluminum Corp.*, 964 F.2d 262, 268 (3d Cir. 1992) (Congress intended to avoid application of joint and several liability in situations where it might produce inequitable results); *United States v. A&F Materials Co., Inc.*, 578 F. Supp. 1249, 1255 (S.D. Ill. 1984) ("both Houses of Congress were concerned about issues of fairness, and joint and several liability is extremely harsh and unfair if it is imposed on a defendant who contributed only a small amount of waste to a site"). The Restatement itself recognizes the potential unfairness of such an outcome and even contemplates that the burden of establishing a defendant's appropriate share of liability in such a case could be shifted to the plaintiff. Restatement (Second) Torts § 433B, comment (e).

Such concerns take on particular force in the CERCLA context. In the typical case of two joint tortfeasors, the parties may be held jointly and severally liable under circumstances where both are culpable to some degree. It is that culpability – as compared to a plaintiff that is often blameless – which supports the notion of joint and several liability, *i.e.*, it is better to impose the entire liability on a defendant who is culpable rather than leave an innocent plaintiff with only a partial remedy if one or more of the defendants is unavailable.

See, e.g., McDermott, Inc. v. AmClyde and River Don Castings, Ltd., 511 U.S. 202, 221 (1994) (when the limitations on the plaintiffs' recovery arise from outside forces, joint and several liability makes the other defendants, rather than an innocent plaintiff, responsible for the shortfall).

In contrast, under CERCLA a party may be held strictly liable for the cost of a cleanup regardless of fault. *See, e.g., United States v. Hardage*, 761 F. Supp. 1501 (W.D. Okla. 1990) (strict liability imposed without regard to fault or state of mind). Thus, in a CERCLA case the equities cannot be said to lie with an innocent plaintiff as compared to a culpable defendant because the CERCLA defendant may well be blameless.[11] As the Fifth Circuit noted:

> Often, liability is imposed upon entities for conduct predating the enactment of CERCLA, and even for conduct that was not illegal, unethical, or immoral at the time it occurred .... We also recognize, however, that CERCLA, as a strict liability statute that will not listen to pleas of "no fault," can be terribly unfair in certain instances in which parties may be required to pay huge amounts for damages to which their acts did not contribute. Congress recognized such possibilities and left it to the courts

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[11] Some might argue that even if a defendant company in a CERCLA cost recovery case is not culpable in the traditional sense, the equities still weigh in favor of requiring the defendant to pay the costs of the cleanup because the defendant profited from the waste-generating activity. In this case, the Railroads charged B&B $410 per year in rent for a period of approximately 15 years, see Brief For Petitioners the Burlington Northern and Santa Fe Railway Co. and Union Pacific Railroad Co. at 9, resulting in total revenue for the Railroads of approximately $6,150. This represents a mere pittance when compared to the more than $11 million in cleanup costs for which the Railroads could be liable under the Ninth Circuit decision.

> to fashion some rules that will, in appropriate instances, ameliorate this harshness.

Bell Petroleum, 3 F.3d at 897. *See also United States v. Chem-Dyne Corp.*, 572 F. Supp. 802, 810 (S.D. Ohio 1983) (the term joint and several liability was deleted from the express language of the statute in order to avoid its universal application to inappropriate circumstances); *United States v. Wade*, 577 F. Supp. 1326, 1337 (E.D. Pa. 1983) (deletion of reference to joint and several liability was intended to avoid mandatory application of the standard to a situation where it would produce inequitable results).

Thus, in CERCLA cases the rationale for apportionment as a means of ameliorating the harsh effects of joint and several liability is even stronger than in the joint tortfeasor case, particularly where the alternative is to impose substantial liability on a party with limited responsibility of any kind for the contamination at a site. This is just such a case in which it would be quite unfair to require the Petitioners to pay millions in cleanup costs when their contribution to the contamination at the site is quite limited. The district court found that Shell was liable for 6% of the harm at the site and that the Railroads were liable for 9%. Pet. App. 255a, 260a. Nevertheless, under the Ninth Circuit's ruling these parties – collectively responsible for less than 1/6 of the harm – will be required to pay the entire bill of over $11 million to clean up the site.

Contrary to the assertion of the Ninth Circuit, neither the language of the statute, the policies underlying CERCLA nor the equities involved dictate such a result. The Ninth Circuit made clear its preference for having "*some* entity with connection to the contamination" rather than the taxpayers pick up the tab for

contamination attributable to parties – such as B&B – that are insolvent. Pet. App. 36a-37a. However, applying the Restatement approach in an appropriate manner the district court found that the Railroads and Shell were not responsible for the remaining 85% of the contamination. Stated differently, the district court found that the Railroads and Shell did not have a "connection" to the vast majority of the contamination at the site. Therefore, under the Ninth Circuit's own reasoning, the Railroads and Shell should not be required to "pick up the tab" for contamination for which they are not responsible. Throwing up roadblocks to achieve the opposite result does not comport with basic notions of fairness and yields exactly the type of harsh results about which Congress was concerned.

Moreover, Congress created a mechanism to address precisely this type of situation. The Hazardous Substances Superfund was created in part because Congress recognized that EPA and State environmental agencies would face situations where contamination needed to be addressed but the responsible party was not available to pay for it. *See* S. Rep. No. 96-848 at 13 (1980) (identifying "providing a fund to finance response action where a liable party does not clean up, cannot be found or cannot pay the costs of cleanup" as one of the "basic elements" of the statute). Congress also recognized that requiring companies such as Shell to pay to establish the Superfund while at the same time imposing joint and several liability on such companies to pay massive costs to clean up particular sites with which they had only a minimal connection would be "grossly unfair." 126 Cong. Rec. at S15004 (Nov. 24, 1980) (statement of Senator Helms). The use of the fund to pay for some of a cleanup where the owner/operator who was responsible for the vast majority of the contamination is not available to pay

would be entirely consistent with the purposes for which the Superfund was established.

In fact, such uses of the Superfund – even though implicating some taxpayer dollars – would result in a more equitable sharing of the risk among all segments of society that benefit from the activities leading to the contamination. Accordingly, the Court should overturn the Ninth Circuit's attempt to discourage the use of apportionment in an overzealous and inappropriate effort to protect the public fisc.

III. THE NINTH CIRCUIT'S RULING INCREASES SUPPLIERS' RISK OF POTENTIALLY SUBSTANTIAL FUTURE CERCLA LIABILITY

The decision below increases the risk of future CERCLA liability that could be substantial, even crippling for suppliers of pesticides, chemicals and other products shipped by common carrier such as ethanol, water treatment products, antiseptics and other cleaning products, paints and primers, printing ink, etc. The Ninth Circuit's ruling creates the risk that a blameless supplier may become liable for the costs to clean up an industrial facility merely because of inadvertent and unintentional leakage of some of the supplier's product at the facility. Given the Ninth Circuit's decision, it is reasonable to predict that CERCLA plaintiffs may target such suppliers and creatively use the Ninth Circuit's decision to seek to impose CERCLA "arranger" liability on an ever-increasing number of suppliers whose sole "crime" was the innocent sale of useful products. In fact, the Ninth Circuit's decision may prompt EPA and state environmental agencies to begin to routinely identify any suppliers that sold or delivered products to the contaminated site at issue as potentially responsible

parties ("PRPs"), thereby subjecting otherwise innocent suppliers to the Pandora's box of potential CERCLA liability, transactional costs and other problems that often befall a person or company formally designated as a PRP at a particular site.

The resulting liability and costs can be onerous. First, at sites (such as the B&B site) where the owner/operator of the facility is no longer viable, the Ninth Circuit's ruling creates the possibility that EPA or the relevant state agency may not only designate any former supplier of products to the facility as a PRP at the site, but pursue the former supplier as the primary PRP and seek to hold the supplier jointly and severally liable for all the cleanup costs at the site.

Moreover, in view of the heightened evidentiary standards imposed by the Ninth Circuit with respect to divisibility of harm, any CERCLA liability imposed on such a supplier is likely to be joint and several. The Ninth Circuit's decision creates standards for demonstrating divisibility of harm that may be impossible to meet and that go well beyond the reasonable basis for apportionment required by other circuits. Given these strict standards parties that have a limited nexus to a site may be forced to pay huge amounts for damages to which their acts did not contribute.

Thus, a company that did no more than supply a useful product could end up bearing the entire cost to clean up a contaminated site. The magnitude of these costs cannot be understated; studies have indicated that the average cost of cleaning up the largest sites on EPA's National Priorities List was approximately $140 million, while the average cost of cleaning up other sites on the NPL was $12 million in 2001. *See* Resources for the Future,

Superfund's Future: What Will It Cost? (RFF Press 2001), at xxv, available at http//www.rff.org/rff/RFF_Press-/CustomBookPages/Superfunds-Future.cfm. The financial implications of the Ninth Circuit's decisions for a wide range of businesses are therefore quite serious.

Moreover, the Ninth Circuit's decision may upset the mutually beneficial business relationship between suppliers and the common carriers that deliver their products. A key aspect to the continued health of this relationship is that suppliers must be able to rely on common carriers to deliver the products without concern that the supplier may incur CERCLA liability for the carrier's actions during delivery of the products. *See Amcast*, 2 F.3d at 751 ("It would be an extraordinary thing to make shippers strictly liable under the Superfund statute for the consequences of accidents to common carriers or other reputable transportation companies that the shippers have held in good faith to ship their products."). For ordinary risks, the supplier and common carrier may simply allocate the risk of this potential liability between themselves or assume additional insurance requirements in their contractual arrangement. However, where the potential liability at issue is CERCLA liability that may easily rise to the millions of dollars rather than merely the cost of lost product, mutual satisfactory contractual arrangements may not be quite as easy to achieve and will undoubtedly increase the parties' costs of doing business.

In addition, many suppliers ship their products nationwide by common carrier to various customers. These suppliers may have to tailor their contractual arrangements with common carriers by means of special liability provisions and insurance protections with respect to the shipments that will involve the delivery of products to customers located in states within the

jurisdiction of the Ninth Circuit. Some of these suppliers may simply cease shipment of goods to these states if the special liability provisions and insurance protections become cost prohibitive. Such artificial constraints on interstate commerce are anathema to our integrated national economy and are a powerful reason for this Court to overturn the Ninth Circuit decision and restore uniformity in this important area of federal law.

Likewise, the Ninth Circuit's approach to apportionment of harm may have a substantial impact on a wide variety of businesses. The Ninth Circuit approach clearly disfavors apportionment and sends a strong signal to trial courts to err heavily on the side of imposing joint and several liability on defendants in all CERCLA cost recovery cases, even where a company with a minimal connection to the contamination at a site may end up footing the bill for the cleanup of the entire site because the parties that are responsible for the contamination are insolvent or otherwise unavailable. The attitude that a business should always be made to pay for a cleanup rather than the public at large cannot justify such inequitable results, particularly given the high costs of site cleanups.

Indeed, the "make the polluter pay at all costs" approach embodied in the Ninth Circuit decision will only serve to further disrupt relationships between suppliers of products and their customers and between lessors and lessees of commercial and industrial property. The specter of joint and several liability being imposed for the cleanup of any site to which a company's products are shipped or on the lessor of any property used even minimally for a business operation substantially raises the stakes for allocation of risk in any such business relationship. Moreover, the imposition of joint and several liability in such circumstances may unfairly

penalize companies that devote significant resources to environmental compliance but may nevertheless be forced to shoulder the entire burden of a multi-million dollar cleanup because of a minimal connection to a site and a failure to keep records that it would never occur to any business to maintain in the normal course of its operations.

Under the Ninth Circuit approach, liability becomes a form of roulette, making losers of — and even bankrupting — companies based simply on a limited or even tangential connection to a contaminated site. As other courts have recognized, Congress intended for apportionment to ameliorate these harsh effects of a joint and several liability regime. The Ninth Circuit has effectively declared that it prefers a different balance. This Court should reverse the Ninth Circuit and restore the balance intended by Congress.

CONCLUSION

For the foregoing reasons the decision below should be reversed.

Respectfully submitted.

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AMICUS CURIAE BRIEF

120

(20) (25)

No. 07-1601, 07-1607

In The

Supreme Court of the United States

THE BURLINGTON NORTHERN AND SANTA FE RAILWAY COMPANY AND UNION PACIFIC COMPANY, *Petitioners*

v.

UNITED STATES OF AMERICA, ET AL., *Respondent*

SHELL OIL COMPANY, *Petitioner*

v.

UNITED STATES OF AMERICA, ET AL., *Respondent*

On Writs of Certiorari to the United States Court of Appeals for the Ninth Circuit

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INTEREST OF *AMICUS CURIAE*

Amicus curiae General Electric Company ("GE") possesses an important interest in the first question presented by these cases – namely, whether liability for "arranging" for disposal of hazardous substances under the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. § 9607(a)(3), may be imposed for merely selling a commercially useful product and transferring ownership and control to a purchaser who then causes contamination involving that product.[1] Such a result, which is directly countenanced by the Ninth Circuit's judgment, cannot be squared with the statutory text, structure, and purpose. The only permissible course is for this Court not only to reverse the Ninth Circuit's judgment, but also to adopt a "sole purpose" or similarly restrictive test for imposing arranger liability under CERLCA.

GE's interest in the first question presented stems from its present status as a defendant in a CERCLA cost-recovery action arising from contamination at the Fletcher Paint site in New Hampshire. *United States v. General Electric Co.*, No. 06-CV-354 (D.N.H.) (*"Fletcher Paint"*). In that proceeding, the federal government seeks over $13 million in clean-up costs on the theory that GE "arranged" for disposal of hazardous waste merely by selling a product to a customer in an arm's-length commercial transac-

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[1] This brief has been filed with the written consent of the parties, which is on file with the Clerk of Court. No counsel for a party authored this brief in whole or in part, nor did any person or entity, other than *amicus* or its counsel, make a monetary contribution to the preparation or submission of this brief.

tion. Like Shell's experience in the case at bar, GE's situation vividly illustrates the breathtaking scope of an "arranger" liability standard that subjects sellers of useful products to massive clean-up costs under CERCLA, even if they never acted with the intent to dispose of a hazardous substance.

CERCLA imposes on the plaintiff the burden of establishing that a "person" arranged for the disposal of hazardous substances. In *Fletcher Paint*, a federal district court has approved EPA's efforts to impose liability on GE based on entirely lawful sales of a product between 1953 and 1967 – long before the enactment of CERCLA in 1980 – even though the court found that disposal was not the "objective of the arrangement" between GE and its buyer and no evidence was presented that GE was aware of the buyer's disposal of any of the product purchased from GE.

GE never owned or controlled the Fletcher site. Its sole contact with the site was the bona fide sale to Fletcher of a PCB-containing substance called Pyranol for use as a plasticizing ingredient in the manufacture of paint and for other commercial purposes. GE did not transport the product to Fletcher, nor did GE have any control over what Fletcher did with the Pyranol once it left GE. Rather, Fletcher used its own employees and its own trucks to pick up Pyranol drums from GE facilities in New York and move them to the Fletcher plant in New Hampshire. Fletcher bought similar products from two other companies.

Fletcher stopped purchasing Pyranol from GE in November 1967, but continued attempting to use it

for commercial purposes for nearly a decade. Over time, the health of Fletcher's owner declined, as did its business. By the mid-1970s, Fletcher apparently ended its efforts to resell its inventory of PCBs to other companies and (unknown to GE) abandoned any drums it owned *in situ* at the site. Although evidence showed that drums were in good condition in 1975, Fletcher left them unmaintained and exposed to the corrosive effects of the harsh New Hampshire climate.

By 1987, when EPA came on site and inspected Fletcher's property, approximately twenty years had passed since Fletcher's last transaction with GE. EPA found PCB-containing drums on the site, which were unmarked and bore no GE logos or other identifying information.

Nevertheless, on November 10, 2008, the *Fletcher Paint* district court held that EPA was entitled to recover cleanup costs from GE under CERCLA based on an expansive theory of "arranger" liability. The court acknowledged that there was no evidence in the record that GE actually "desired" any disposal of waste. Nevertheless, the court imposed liability on the basis of a finding that GE understood that disposal of waste was "substantially certain" to result from its sale of Pyranol to Fletcher.

The *Fletcher Paint* decision makes clear that CERCLA "arranger" liability has become unmoored from any statutory bearings. If GE can be held liable for the disposal of waste based on its sale of Pyranol to Fletcher, then innumerable parties currently operating throughout the national economy may find themselves hit with untold millions of dollars in

wholly unexpected CERCLA liability, based on entirely proper commercial transactions that occurred decades ago. Such enormous retroactive liability runs flatly contrary to congressional intent and also raises serious constitutional questions.

Fletcher Paint also makes clear that this Court should not merely reverse the Ninth Circuit's judgment in the instant case and hold that "arranger" liability embodies a showing of *some* sort of intent on the part of the seller of a useful product. Rather than leaving the intent requirement undefined, this Court should prescribe the "sole purpose" test as the proper basis for arranger liability in the context of the sale of a useful product. That is, this Court should hold that responsibility for environmental clean-up under CERCLA's arranger liability provision may be imposed only if the sole purpose of the parties to the transaction is to dispose of hazardous substances.

ARGUMENT

I. ARRANGER LIABILITY UNDER CERCLA MUST BE LIMITED BY THE "SOLE PURPOSE" TEST.

CERCLA imposes liability for the costs of hazardous waste clean-up on four categories of potentially responsible parties ("PRPs"). 42 U.S.C. § 9607(a). *See United States v. Atlantic Research Corp.*, 127 S. Ct. 2331, 2334 (2007). Among CERCLA's categories of PRPs are persons who "*arranged for* disposal . . . of hazardous substances." 42 U.S.C. § 9607(a)(3) (emphasis added).[2]

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[2] In full, the "arranger" liability provision imposes liability on: "any person who by contract, agreement or otherwise ar-

This Court has never addressed the meaning of CERCLA's "arranger" liability provision. In the absence of guidance from this Court, the courts of appeals have split in delineating the parameters of the provision. This circuit conflict has centered largely on whether the intent of the parties must be to dispose of hazardous substances in order for the sale and shipment of hazardous substances to constitute an arrangement for disposal under CERCLA's "arranger" liability provision, and in particular on the *degree* of requisite intent. In GE's view, the better reasoned decisions in the courts of appeals interpret the provision to contain an intent requirement and to provide that "arranger" liability under CERCLA attaches only when two parties enter a transaction for the *sole purpose* of disposing of a hazardous substance. This standard best comports with the text of the "arranger" liability provision. It excludes from the ambit of CERCLA liability parties who intend merely to sell and transport useful products to their customers and who surrender both ownership and control of the products upon delivery to the customers.

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ranged for disposal or treatment or arranged with a transporter for disposal or treatment of hazardous substances owned or possessed by such person, by any other party or entity, at any facility or incineration vessel owned or operated by another party or entity and containing hazardous substances' 42 U.S.C. § 9607(a)(3).

A. The Sole Purpose Standard Is Consistent With The Ordinary Meaning of The Term "Arranged For Disposal" In CERCLA's Arranger Liability Provision.

CERCLA does not define the term "arranged for" in the context of disposal. Under basic principles of statutory construction, the term therefore must be given its ordinary meaning, in accordance with the dictionary definition of the term. *See, e.g.*, *Asgrow Seed Co. v. Winterboer*, 513 U.S. 179, 187 (1995); *FDIC v. Meyer*, 510 U.S. 471, 476 (1994); *Perrin v United States*, 444 U.S. 37, 42 (1979).

The ordinary meaning of the word "arrange" is "to make preparations for," Webster's Third New International Dictionary 120 (1993), or to "plan for," Webster's II New College Dictionary 62 (2001). Both of these definitions plainly "connote[] an intentional action toward achieving [a] purpose." Pet. App. 70a (dissenting opinion).[3]

Applying this ordinary meaning of "arrange for," the *Burlington Northern* dissenters expressly recognized that a person must have acted with the specific purpose of disposing of hazardous substances in order to be considered a PRP under CERCLA's arranger liability provision. *Id.* The Seventh Circuit has adopted the same view. *Amcast Indus. Corp. v. Detrex Corp.*, 2 F.3d 746, 751 (7th Cir. 1993). Under this standard, a party whose sole purpose is to sell a useful product cannot be deemed an "arranger" for the disposal of substances within the meaning of

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[3] All citations to "Pet. App." refer to the Petition Appendix filed in No. 07-1607.

CERCLA, even if the purchaser subsequently mishandles the product and creates environmental contamination.[4]

Judge Posner's statutory analysis in his opinion for the Seventh Circuit in *Amcast* demonstrates that the "sole purpose" standard is compelled by the text of the arranger liability provision. Focusing first on the ordinary meaning of "arrange for," Judge Posner observed that "[those] words imply intentional action." *Amcast*, 2 F.3d at 751. Applying an intent requirement, Judge Posner reasoned that the defendant in *Amcast* was not liable to the plaintiff-buyer under CERCLA as an "arranger for disposal. . . of hazardous substances" because the defendant's purpose was to sell and deliver its product to the buyer

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[4] Although they do not explicitly apply the purpose-centric, ordinary meaning of "arrange for," decisions in the Second and Eleventh Circuits also recognize the statutory imperative to divine the parties' intent. These circuits have held that the mere sale of a product cannot trigger CERCLA arranger liability, absent "additional evidence the transaction include[d] an 'arrangement' for the ultimate disposal of a hazardous substance." *Florida Power & Light Co. v. Allis Chalmers Corp.*, 893 F.2d 1313, 1319 (11th Cir. 1990); *Freeman v. Glaxo Wellcome, Inc.*, 189 F.3d 160, 164 (2d Cir. 1999). And both circuits have indicated that evidence of an intent to dispose is central to the "arrangement" inquiry. *See Florida Power*, 893 F.2d at 1319 (seller not liable as "arranger" because there was no evidence that it "intended to . . . dispose of hazardous waste by selling [its product]"); *Freeman*, 189 F.3d at 164 (holding that there was no evidence in record of an arrangement to dispose and citing comparable cases rejecting arranger liability theory on grounds that parties merely "intended" a product to be used in a particular manner and that their "motivation" in entering the transaction was not disposal of the product) (citations omitted).

for the buyer's use, not for the buyer to dispose of it. *Id.*

Judge Posner next addressed the significance that the plaintiff in *Amcast* attached to evidence that drivers employed by a common carrier with which the defendant arranged to make deliveries to the buyer inadvertently spilled the product when unloading it into the buyer's storage tanks. *Id.* at 748. The buyer seized on this evidence because CERCLA defines "disposal" to include accidental spills. 42 U.S.C. §§ 6903(3), 9601(29). Thus, the buyer argued, the defendant qualified as an "arranger for disposal" by virtue of its use of a common carrier that spilled the product when making deliveries. This same thesis animated the Ninth Circuit in *Burlington Northern*, leading it to surmise that "'disposal' need not be purposeful" in order for arranger liability to attach. Pet. App. 44a. The Seventh Circuit in *Amcast* rejected this supposition on the ground that it was foreclosed by the text of the arranger liability provision.

In reaching that conclusion, Judge Posner's opinion carefully compared the arranger liability provision with the quite different portion of CERCLA that treats as PRPs past and present owners or operators of facilities at which disposal of hazardous substances takes place. 42 U.S.C. §§ 9607(a)(1),(2). As Judge Posner explained, it is entirely consistent with the text of the latter provisions to interpret CERCLA as imposing liability on owners and operators even for entirely accidental disposals at their facilities because the language of the owner and operator provisions does not speak in terms of purposeful disposal – unlike the term "arrange for" in the arranger liability

provision. *Amcast*, 2 F.3d at 751.[5] By contrast, it defies the ordinary meaning of the term "arrange for" to interpret the arranger liability provision as imposing liability for accidental disposals on a party that intends merely to sell its product because, as Judge Posner correctly reasoned, no one purposefully plans (*i.e.*, arranges for) an accident. After all, under the ordinary meaning of the term, an "accident" necessarily is an unintentional event. *Id.* Accidents may, of course, be foreseeable. But mere knowledge by a seller that inadvertent spills are substantially certain to occur does not mean that the seller intended for an accident to happen. That is precisely the theory of arranger liability adopted by the Ninth Circuit in the instant case and the district court in GE's *Fletcher Paint* case. As shown by Judge Posner's opinion in *Amcast*, that theory has no foundation in the statutory text.[6]

In the end, the sole purpose standard encapsulates what Judge Posner described as the archetypal case "contemplated" by the text of CERCLA's arranger liability provision: a party that makes an agreement with a waste hauler or similar person

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[5] CERCLA's owner and operator provisions impose responsibility for environmental clean-up costs on "(1) the owner and operator of . . . a facility [and] (2) any person who at the time of disposal of any hazardous substance owned or operated any facility at which . . . hazardous substances were disposed of." 42 U.S.C. § 9607(a)(1),(2).

[6] As Judge Posner observed in rejecting this theory in another CERLCA case, "[i]t seems to us very odd, even in Superfund Cloudcuckooland, to attribute the negligent, unforeseeable conduct of the buyer's agents to the seller." *G.J. Leasing Co., Inc. v. Union Elec. Co.*, 54 F 3d 379, 385 (7th Cir. 1995).

with the sole purpose of conveying material containing hazardous substances to a treatment or disposal facility. Judge Posner had in mind "a person or institution that wants to get rid of its hazardous wastes [and] hires a transportation company to carry them to a disposal site. If the wastes spill en route, then such spillage is disposal and the shipper had arranged for disposal – though not in that form – the shipper is a responsible party." *Id.* In such cases, there is direct evidence that the shipper's purpose was disposal and arranger liability attaches. But the arranger liability provision simply does not encompass situations (such as GE's *Fletcher Paint* case) where "the shipper is not trying to arrange for the disposal of hazardous wastes, but [rather] is arranging for the delivery of a useful product. . . ." *Id.* In such cases, circumstantial evidence that the shipper knew that disposal could occur by dint of what the buyer subsequently might do or not do with the product cannot be the basis of arranger liability because the shipper itself lacked the requisite purpose to dispose of a hazardous substance: its purpose was to sell the product.

Interpreting the term "arrange for disposal" as requiring direct evidence that disposal was a seller's sole purpose is bolstered by the meaning of the word "disposal" in CERCLA's arranger liability provision. CERCLA incorporates the definition of "disposal" in the Solid Waste Disposal Act, 42 U.S.C. § 9601(29). Under the SWDA, "disposal" means "the discharge, deposit, injection, dumping, spilling, leaking, or placing of any . . . *hazardous waste* into or on any land . . . so that [it] may enter the environment." 42 U.S.C.

§ 6903(3) (emphasis added). As the Second Circuit correctly observed, a product sold to a buyer is not "hazardous waste" within the meaning of the term "disposal." *Freeman v. Glaxo Wellcome, Inc.*, 189 F.3d 160, 164 (2d Cir. 1999).

Thus, a person who sells a product to a buyer cannot be deemed an "arrang[er] for disposal." That calculus does not change if the buyer fails to use all of the product and later discards or abandons portions of it. It is the seller's and buyer's collective intent at the time of the alleged arrangement that counts. And if the seller's purpose was not to have hazardous substances discharged, deposited, or otherwise placed into the land so that they may enter the environment, then the seller cannot be held liable as an arranger for disposal of hazardous waste. The buyer's subsequent actions with the product cannot alter that fact.

B. The Sole Purpose Standard Is Consistent With CERCLA's Strict Liability Regime And Does Not Exempt From Responsibility Owners And Operators Of Facilities Or Persons Who Retain Ownership And Control Of A Product Following Shipment To A Customer.

Interpreting the arranger liability provision to require a showing of purposeful disposal is not at odds with CERCLA's "system of strict liability." Pet. App. 9a. As the Sixth Circuit correctly pointed out in construing the "arranger" provision to contain an intent requirement: "The intent inquiry is geared only towards determining whether the party in question is a potentially liable party. Once a party is determined

to have the requisite intent to be an arranger, then strict liability takes effect. If an arrangement has been made, that party is liable for damages caused by the disposal regardless of the party's intent that the damages not occur." *United States v. Cello-Foil Prods. Inc.*, 100 F.3d 1227, 1232 (6th Cir. 1996); *see also Gencorp v. Olin Corp.*, 390 F.3d 433, 446 (6th Cir. 2004). In short, if a person arranges for the disposal of hazardous substances – *i.e.*, if disposal is the purpose of the transaction – then the person may be strictly liable for any spills that occur in connection with sale or transfer of the substances. But the converse is not true – the strict liability imposed by CERCLA does not govern who may be deemed an "arranger" in the first place.

Nor will adoption of the sole purpose standard affect the imposition of liability on parties that directly dispose of hazardous waste, or on parties that "owned or operated any facility at which such hazardous substances were disposed of." 42 U.S.C. § 9607(a)(2). The "sole purpose" standard affects only arranger liability. The two issues are apples and oranges.

Moreover, the sole purpose standard will not enable a seller to evade responsibility for "sham" sales[7] or for environmental clean-up when it professes an intent to transfer its product for use by another party, but retains ownership and control of the product at the time of disposal. In such situations, the arranger liability provision would continue to apply. By its terms, the arranger liability provision imposes

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[7] *See United States v. Marine Shale Processors*, 81 F.3d 1361, 1365 (5th Cir. 1996) (sham recycling).

responsibility for clean-up costs on persons who arrange for the disposal of hazardous substances "owned or possessed by [those] person[s]." 42 U.S.C. § 9607(a)(3). Thus, a seller who never relinquishes title or dominion over its product, even after transfer for use by another party, is responsible for the product at the time of its disposal. Put another way, in such cases, whatever the seller's purpose in transferring the product, it cannot be divorced from disposal of the product when the seller maintains an ownership responsibility for the handling of the product. *See* Pet. App. 70a-73a (dissenting opinion). But the seller cannot be held liable as an arranger for disposal when it *surrenders* ownership and control upon delivery of the product, such that the act of disposal of the product is completely divorced from the seller's and buyer's purpose in entering the transaction.

Hence, the "sole purpose" test is entirely consistent with any legitimate statutory goal of ensuring that the parties responsible for the disposal of hazardous waste bear the financial costs attributable to its clean-up.

II. EXPANSIVE ARRANGER LIABILITY WOULD PRODUCE ABSURD AND UNCONSTITUTIONAL RESULTS.

Unless arranger liability is properly limited to the "sole purpose" test, it will produce unreasonable – indeed, even patently absurd – results that violate congressional intent and raise serious constitutional questions.

A. General Electric's *Fletcher Paint* Case Illustrates the Potential For Unreasonable Breadth of Arranger Liability.

GE's own experience at the Fletcher Paint site illustrates the dangers of an expansive interpretation of CERCLA's arranger liability provision. EPA's action against GE stems from sales that occurred between 1953 and 1967.[8] During that period, Monsanto Company manufactured Aroclor, a chemical product containing polychlorinated biphenyls ("PCBs"). GE purchased Aroclor from Monsanto and processed it to create Pyranol, the trade name for a mixture that GE used as a dielectric fluid in its capacitor manufacturing operations in New York. GE's technical specifications for its sensitive capacitor operations were extraordinarily exacting. Even trace amounts of free chlorides, water, or other impurities caused GE to reject a particular batch of Pyranol for capacitor manufacturing and to designate that batch as "scrap," although it could be used for other less-demanding purposes.

As a result of scrap Pyranol's usefulness, GE was able to sell some of it to Fletcher Paint Works ("FPW"), an independent paint manufacturing business in New Hampshire that GE neither owned nor operated. FPW used Pyranol in its paint manufacturing operations as a plasticizer of rubber-based paint and for other experimental applications. FPW also purchased similar PCB-containing products from other vendors for similar purposes. Pyranol was par-

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[8] The history presented here is drawn from GE's factual submissions in the *Fletcher Paint* litigation.

ticularly useful to FPW because it was a more cost-effective ingredient than alternative PCB products.

Although GE sold Pyranol to FPW between 1953 and 1967, it did not deliver or arrange for the delivery of the product to FPW. Indeed, FPW or its agents took possession of the Pyranol before it even left GE's plants. FPW used its own employees and trucks (or, on a few occasions, hired a third party) to transport Pyranol, at its own expense, from GE's plants in New York to FPW's plant in New Hampshire. Prior to loading the Pyranol into their trucks and leaving GE's facilities, FPW's drivers or agents had the opportunity to (and routinely did) test the Pyranol's quality, check the drums for leakage, and perform any needed drum repairs at the GE facilities, using tools that they brought with them specifically for that purpose. In light of the secure state of the drums at the time they left the GE facilities, and the inspections performed by FPW drivers, GE had no reason to expect any releases or spillage from the drums that FPW picked up from GE.

FPW controlled the Pyranol from the moment of pick up at GE. Thus, in addition to using Pyranol in its own operations, and unbeknownst to GE, FPW resold some of it to other companies. In some cases, FPW processed the Pyranol before reselling it, while in other cases FPW resold the product in the same condition as when it had been transported from GE. FPW's customers then put Pyranol to their own productive uses. FPW's primary Pyranol customer, W.F. Webster Cement ("Webster"), used the product in the manufacture of roof coating products.

In late 1967, Webster was acquired by another company and soon stopped purchasing Pyranol from FPW. This unexpected development left FPW with a surplus inventory of Pyranol that had been earmarked for sale to Webster. As a result of these changed circumstances, FPW ceased buying Pyranol from GE in 1967 and in fact refused to pay its last invoice of nearly $7,000. After attempting to recover the outstanding balance, GE was forced to write off the amount in 1968, and the two companies had no contact at all after the early 1970s.

FPW continued to operate an active business on the property long after its relationship ended with GE. In 1987, some twenty years after GE's last sale of scrap Pyranol to FPW, EPA discovered approximately 800 drums containing hazardous substances at the FPW site. The drums had apparently been stored outdoors, exposed to the elements of the New Hampshire weather. All of the drums were either unmarked or bore no obvious indicia of their source. There was no evidence to link any of the drums – even those containing PCBs – to GE.

Nevertheless, EPA issued administrative orders to GE in 1995 and 2001, charging GE with responsibility for the release of PCBs at the Fletcher Paint site without ever having established that GE arranged for disposal. Pursuant to these orders, GE has undertaken and is continuing to undertake massive efforts to clean up the site, at a cost of over $7 million to date. Despite these efforts, the federal government filed a separate CERCLA suit against GE to recover an additional amount (over $13 million) in response costs. *United States v. General Elec-*

tric Co., No. 06-CV-354 (D.N.H. filed Sept. 20, 2006) (hereinafter *Fletcher Paint*). Moreover, the government has indicated that it will seek an estimated $34 million in future costs from GE, bringing the total to over $54 million.

On November 10, 2008, the district court ruled after a bench trial that GE could be held liable under CERCLA for EPA's response costs on the theory that GE "otherwise arranged for disposal" of PCBs at the Fletcher Paint site. The court held that such "arranger liability" extends to parties who enter an arrangement "know[ing] that disposal is *substantially certain* to result." Tr. at 135 (emphasis added).[9] The court found that "GE understood that while Mr. Fletcher hoped to make productive use of some of the Pyranol, he clearly could not make productive use of much of it." Tr. at 152. As a result, the court concluded, "GE understood that this was an arrangement with Mr. Fletcher that would result in Mr. Fletcher disposing of substantial quantities of the scrap Pyranol at the site." *Id.* at 154.

The court held GE responsible for the clean-up at the FPW site on an arranger liability theory despite acknowledging that disposal of the Pyranol was *not* GE's "desired outcome." *Id.* at 135. In canvassing the record in the case, the district court stated unequivocally that "GE did not in entering into the arrangement desire that the barrels be disposed of. That was not the objective of the arrangement." *Id.* at 152. For good measure, the court observed that

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[9] All citations to "Tr." refer to the transcript of the hearing before the district court held on November 10, 2008.

there was absolutely no evidence in the record that GE actually "desired this disposal." *Id.* at 63. "It's undisputed that GE's principal objective was to be rid of the scrap Pyranol. . . . GE was indifferent to whether it would be used in a product or released into the environment." *Id.* Although GE may have wanted "to be rid of what it believed was a waste product and to do it in the most economically viable way," the company was at worst "indifferent to what happened to it after it got to the Fletcher's property." *Id.* at 148. There was simply no evidence that GE "desired that [the scrap Pyranol] be released into the environment." *Id.*

The district court's decision in GE's *Fletcher Paint* case illustrates the abusive potential of "arranger" liability under CERCLA. Whatever the source of the PCB-contaminated drums found by EPA at the FPW site in 1987, any "disposal" of that waste did not stem from GE's conduct during its commercial relationship with FPW in the 1950s and 1960s. Any leakage or release occurred solely because of what Fletcher did with the drums later, long after GE ceased to exercise any ownership, possession, or control over the material in question.

To impose "arranger" liability in such circumstances would shatter any statutory boundaries. The text of the statute, as addressed in Part I, *supra*, forecloses the district court's view that a company somehow "arranges" for disposal by selling more of a product than (it turns out, in retrospect) the buyer can use. Such a situation bears no resemblance to the example of hiring a waste hauler to transport hazardous waste to a treatment or disposal facility,

which Judge Posner properly identified as the paradigmatic instance of CERCLA "arranger" liability. Indeed, under the district court's construction, GE would arguably be subject to "arranger" liability even if Fletcher had not abandoned the site but instead had shipped all the PCB-containing drums to a licensed treatment facility. Even in that situation, according to the district court, GE would have been "substantially certain" that disposal would occur.

The district court's interpretation would result in additional, equally unreasonable consequences, such as authorizing the imposition of "arranger" liability on Monsanto. For all relevant purposes, GE's sales of Pyranol to FPW were no different in intent from GE's purchases of Aroclor from its manufacturer (Monsanto) or from FPW's own sales of Pyranol to *its* customers. Like GE, Monsanto knew that FPW had an excess supply of scrap Pyranol. (FPW approached Monsanto in an attempt to sell some of it.) And like GE, Monsanto knew nothing about how FPW stored its inventory of scrap Pyranol at its plant.

The imposition of "arranger" liability in *Fletcher Paint* would make every seller in a series of suppliers a potential "arranger" of disposal, no matter how temporally remote its sale from the eventual actual release of hazardous substances. Such a theory has no logical stopping point and would lead to the specter of an endless chain of CERCLA liability, running through all sectors of the economy, foisting responsibility on each company that in turn sold a useful product at arm's length to the next. Under the view of the Ninth Circuit and the *Fletcher Paint* court, interdependence and specialization of labor – the sine

qua non of economic efficiency – would allow EPA to tap into whatever deep pockets it could find to subsidize the government's cleanup projects.

B. *Fletcher Paint* Illustrates That Mere Reversal of the Ninth Circuit's Judgment, By Itself, Is Not Enough.

The *Fletcher Paint* decision also makes clear that this Court should not merely reverse the Ninth Circuit's judgment in the instant case and hold that "arranger" liability embodies some sort of undefined intent requirement. Rather, this Court should prescribe the "sole purpose" test or something similarly restrictive as the proper predicate for CERCLA "arranger" liability in the context of the sale of a useful product. Merely reversing the Ninth Circuit's judgment, by itself, would not be enough to produce the necessary clarification and avoid the impermissible expansion of "arranger" liability in the lower courts.

After all, the district court in *Fletcher Paint* was able to impose unwarranted liability on GE even while purporting to reject the Ninth Circuit's interpretation of the arranger liability provision in *Burlington Northern*. *See* Tr. at 17-19 (opining that the Ninth Circuit adopted "an overly expansive unrealistic definition of the arranger liability standard" and asserting that it was using "a different standard," such that "if *Burlington Northern* is reversed by the Supreme Court, it does not necessarily follow that the standard that I'm using is incorrect").[10]

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[10] The *Fletcher Paint* arranger liability standard is, in at least one important respect, even more expansive and unreasonable than the Ninth Circuit's test in *Burlington Northern*.

The district court imposed "arranger" liability by ignoring the statutory text that defines such liability and by placing an unrealistic burden on sellers of products containing hazardous substances. Just as the Ninth Circuit impermissibly deemed Shell liable because its "sale of a useful product necessarily and immediately result[ed] in the leakage of hazardous substances," Pet. App. 45a, the district court in *Fletcher Paint* held that GE was liable as an "arranger" because its sale of Pyranol was "substantially certain" to result in disposal of PCBs. That an event

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For all its flaws, the Ninth Circuit at least premised liability on a finding that Shell played some direct role in the disposal: "Shell arranged for delivery of the substances to the site by its subcontractors; was aware of, and to some degree dictated, the transfer arrangements; knew that some leakage was likely in the transfer process; and provided advice and supervision concerning safe transfer and storage." Pet. App. 46a. (It is GE's position that, despite those findings, Shell should not be subject to "arranger" liability, as they do not change the fact that disposal was not Shell's sole purpose in selling a useful nematocide to its customer.)

But the disposal at issue in *Fletcher Paint* was purely a function of FPW's – and only FPW's – conduct, including leakage from drums that FPW stored for decades outdoors at its site. GE did not "dictate[] the transfer arrangements" for delivering scrap Pyranol to FPW. Instead, FPW used its own employees and trucks (or, on a few occasions, hired a third party) to transport scrap Pyranol at its own expense; and prior to loading the scrap Pyranol into their trucks and leaving GE's facilities, FPW's drivers or agents had the opportunity to (and routinely did) test the scrap Pyranol's quality, check the drums for leakage, and perform any needed repairs. Nor did GE play any role in how FPW decided to store drums at its plant: GE did not "dictate" the improper storage conditions and in fact knew nothing about them. Indeed, GE surrendered all control of the drums to FPW at the time that FPW's drivers or agents picked them up at GE's facilities.

is "substantially certain" to occur, given the inherent limits of industrial hygiene and the vagaries of nature, does not mean that it is *intended* to occur – *i.e.*, that its occurrence was "*arranged*." The presumption that actors may be deemed to intend the natural consequences of their actions is not to be blindly attributed to Congress, especially where it produces unreasonable results or collides with other important values. *See, e.g., Giles v. California*, 128 S. Ct. 2678, 2684 (2008) (holding in context of Confrontation Clause that knowledge that murdered witness would be unavailable to testify at trial would be insufficient to show that "the defendant intended to prevent a witness from testifying"); *Bray v. Alexandria Women's Health Clinic*, 506 U.S. 263, 275-76 (1993) (holding that antiabortion demonstration's incidental effect on women's right to interstate travel did not suffice to show intent to deprive those women of their protected interstate travel right, even though burden was foreseeable and natural consequence of the blockades); *Sandstrom v. Montana*, 442 U.S. 510, 518-24 (1979) (invalidating instruction that the accused was presumed to intend the ordinary consequences of his voluntary acts).

The *Fletcher Paint* decision demonstrates that the "substantially certain" test does not impose an adequate limit on CERCLA "arranger" liability. The district court was able to conclude that the "substantially certain" test was met, even though the court did *not* find – nor could it have found – that GE knew that FPW would lose its chief customer after the GE sales had ended; that the health of FPW's owner and its business would decline; that FPW would ulti-

mately choose to abandon the site many years after the GE sales ended; and that FPW would choose to dispose of the product improperly, by storing the drums outdoors and exposing them for years to the elements of New Hampshire's harsh climate. The district court's holding demonstrates that, in practice, the "substantially certain" test is no limit on CERCLA "arranger" liability at all. If the test can be satisfied in *Fletcher Paint*, it can be satisfied in virtually any useful product case. The test would effectively require each seller, in order to avoid liability under the "arranger" test, to divine how every one of its customers will store and handle the product, in perpetuity.

In sum, cases like *Fletcher Paint* illustrate the unreasonable breadth of a standard that holds sellers of useful products liable as arrangers of disposal even when it is undisputed that they did not intend for disposal to occur. Such expansive liability was never envisioned by Congress, which instead chose to tax manufacturers of useful chemical products for contribution to the Hazardous Substance Superfund. *See* 26 U.S.C. §§ 4611, 4661, 4662. In keeping with the text and structure of the statute, the proper standard in holding a seller of a product liable as an arranger of disposal is whether, in entering the sales arrangement, the seller's sole purpose was to dispose of the hazardous substance in question.

C. Expansive Arranger Liability Raises Serious Constitutional Questions.

In the hands of the Ninth Circuit and the *Fletcher Paint* court, "arranger" liability empowers the government to impose severe, retroactive, multi-

million-dollar liability for commercially reasonable, arm's length transactions, based entirely on what the buyer of a product chooses to do with it, completely outside the seller's control. Although the lower courts have upheld CERCLA against facial constitutional challenges,[11] the expansion of "arranger" liability raises uniquely troubling questions under the Fifth Amendment. Such untrammeled "arranger" liability is constitutionally problematic *precisely because* CERCLA is such strong medicine and because it operates with respect to waste disposal that occurred prior to its enactment. *See, e.g.*, *Commonwealth Edison Co. v. United States*, 271 F.3d 1327, 1351 (Fed. Cir. 2001); *United States v. Olin*, 107 F.3d 1506, 1512-15 (11th Cir. 1997). CERCLA's retroactive application of strict, joint and several liability to non-negligent activity is unique in American law and has imposed massive economic costs. *See* Stephen Breyer, BREAKING THE VICIOUS CYCLE: TOWARD EFFECTIVE RISK REGULATION 18 (1993). CERCLA contains ready ingredients for the unconstitutional imposition of arbitrary liability. It is these very features of CERCLA that militate against the willy-nilly expansion of "arranger" liability to cover the sale of a product to a buyer in a bona fide commercial relationship.

In other contexts, this Court has held that, even where a party is causally responsible for a particular

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[11] *See, e.g., United States v. Alcan Aluminum Corp.*, 315 F.3d 179, 188-90 (2d Cir. 2003); *United States v. Dico, Inc.*, 266 F.3d 864, 879-80 (8th Cir. 2001); *Franklin County Convention Facilities Authority v. American Premier Underwriters, Inc.*, 240 F.3d 534, 550-53 (6th Cir. 2001).

harm in a but-for sense, the Constitution imposes limits on the imposition of retroactive liability, to ensure that the liability is reasonably foreseeable and proportionate to the party's conduct. *Eastern Enterprises v. Apfel*, 524 U.S. 498 (1998). In *Eastern Enterprises*, the Court held that, under the Fifth Amendment, the Coal Industry Retiree Health Benefit Act of 1992, 26 U.S.C. §§ 9701-9722, could not be applied retroactively to require a company that had once owned a coal mining business to pay health care benefits to over 1,000 former employees of that business. Although there was no single opinion for the Court, Justice O'Connor, writing for a plurality that included Chief Justice Rehnquist, Justice Scalia, and Justice Thomas, distilled from prior case law three factors of "particular significance" to a Fifth Amendment takings inquiry: "the economic impact of the regulation, its interference with reasonable investment backed expectations, and the character of the governmental action." 524 U.S. at 523-24.

The remaining Justices applied similar reasoning, although they would have framed the inquiry in terms of Fifth Amendment due process rather than the Fifth Amendment's Takings Clause. In the opening paragraph of his separate opinion, Justice Kennedy went out of his way to underscore that he was "in full accord with many of the plurality's conclusions." 524 U.S. at 539 (Kennedy, J., concurring in the judgment and dissenting in part). He agreed that "[t]he plurality's careful assessment of the history and purpose of the statute in question demonstrates the necessity to hold it arbitrary and beyond the legitimate authority of the Government to enact." *Id.*

Even the dissenters agreed that retroactive liability is constitutional only if the parties on whom costs are imposed may *reasonably* be held responsible for the expenses they are being asked to bear. *See* 524 U.S. at 556-58 (Breyer, J., joined by Stevens, Souter, and Ginsburg, JJ., dissenting). The dissenters explained that, "like the plurality," they "would inquire if the law" as applied retroactively was "fundamentally unfair or unjust." *Id.* at 558. "[T]he Due Process Clause can offer protection against legislation that is unfairly retroactive . . . for . . . a law that is fundamentally unfair because of its retroactivity is basically arbitrary." *Id.* at 557 (Breyer, J., dissenting).

Eastern Enterprises underscores that Fifth Amendment takings and due process questions raised by retroactive application of a statute are not coterminous with the issue of causation of the harms that the statute is designed to redress. After all, Eastern Enterprises itself was linked to the injury the Coal Act sought to remedy: the company had employed the miners involved, had benefited from their past labor, and was at least partially responsible for their health conditions. Yet retroactive application of the statute to Eastern Enterprises was held unconstitutional. Indeed, all nine Justices in *Eastern Enterprises* made clear that the Fifth Amendment may sometimes preclude the imposition of disproportionate retroactive liability *even if a party is somehow causally responsible for the harm in question*. Eastern "could not have contemplated liability" of the magnitude it faced. 524 U.S. at 531. Even though there was a causal link, it was too "tenuous." *Id.*; *see also id.* at 549-50 (opinion of Kennedy, J.); *id.* at 558-59, 566-68 (Breyer, J., dis-

senting). All nine Justices concluded that a reviewing court must engage in a fact-intensive inquiry to consider the particular facts and circumstances of individual statutory applications in determining whether the retroactive imposition of liability violates the Fifth Amendment. *See* 524 U.S. at 523, 528-29 (plurality); *id.* at 549-50 (opinion of Kennedy, J.); *id.* at 559, 566-68 (Breyer, J., dissenting). *See also Kelo v. City of New London*, 545 U.S. 469, 493 (2005) (Kennedy, J., concurring) (citing separate opinion in *Eastern Enterprises* as calling for "heightened scrutiny for retroactive legislation under the Due Process Clause"); *Lingle v. Chevron U.S.A. Inc.*, 544 U.S. 528, 548 (2005) (Kennedy, J., concurring) (citing *Eastern Enterprises* concurrence for the proposition that "a regulation might be so arbitrary or irrational as to violate due process"); *Tahoe-Sierra Preservation Council, Inc. v. Tahoe Regional Planning Agency*, 535 U.S. 302, 324 (2002) (citing *Eastern Enterprises*); *Barnhart v. Peabody Coal Co.*, 537 U.S. 149, 174 (2003) (Scalia, J., joined by O'Connor and Thomas, JJ., dissenting) ("We have held that the Commissioner's use of this power [to require coal companies to pay health benefits] violates the Constitution to the extent it imposes severe retroactive liability on certain coal companies.") (citing *Eastern Enterprises*).[12]

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[12] The lower courts have read *Eastern Enterprises* in this fashion. *See, e.g., Asociación De Subscripción Conjunta Del Seguro De Responsabilidad Obligatorio v. Flores Galarza*, 484 F.3d 1, 20 (1st Cir. 2007) (following *Eastern Enterprises* and explaining: "[f]ive members of the Court went on to conclude that the Coal Act's application to Eastern was unconstitutional, but Justice Kennedy relied on due process, rather than takings,

Retroactive "arranger" liability for the sale of a product – absent any showing that disposal was the seller's and buyer's "sole purpose" – runs afoul of the constitutional limits identified in *Eastern Enterprises*. First, as GE's experience demonstrates, "the economic impact of the regulation," *Eastern Enterprises*, 524 U.S. at 523, can be severe. GE has already spent over $7 million to comply with EPA administrative orders to clean up the FPW site, has now been held liable for EPA response costs of over $13 million, and faces the prospect that the govern-

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principles"); *U.S. Fidelity & Guar. Co. v. McKeithen*, 226 F.3d 412, 416-20 (5th Cir. 2000) (applying the three *Eastern Enterprises* factors to hold that a state workers' compensation statute altering a funding formula violated the Fifth Amendment as applied to pre-enactment insurance contracts of insurers who had withdrawn from the state market or had substantially reduced their underwriting in the state); *Golan v. Ashcroft*, 310 F. Supp. 2d 1215, 1220 (D. Colo. 2004) (focusing on "Justice Kennedy's concurrence in *Eastern Enterprises* for the proposition that retroactive legislation that unfairly burdens individuals and disrupts settled expectations is arbitrary and, thus, violates due process," in order to deny motion to dismiss due process claim). Commentators have expressed the same view. *See, e.g.*, Bruce Howard, "A New Justification for Retroactive Liability in CERCLA: An Appreciation of the Synergy Between Common and Statutory Law," 42 ST. LOUIS U. L.J. 847, 847 n.a1 (1998) ("[T]he decision in *Eastern Enterprises* makes it clear that courts must be prepared to find that in any given case the particular facts of CERCLA liability, if enforced against an unfortunate party to the limits of the strict, joint, several and retroactive law, will run afoul of the takings and due process clauses of the Constitution."); Jan G. Laitos, "The New Retroactivity Causation Standard," 51 ALA. L. REV. 1123, 1129 n.35 (2000) ("The *Eastern Enterprises* result raises questions about the constitutional validity of CERCLA"); Daniel E. Troy, "Retroactive Legislation" 85 (American Enterprise Institute 1997) (arguing that retroactive application of CERCLA may be unconstitutional).

ment will seek an additional $34 million in future costs from GE. These costs far exceed the revenues generated by GE's sales of Pyranol to FPW, which never surpassed $4.00 per 55-gallon drum. In *Eastern Enterprises*, by contrast, the coal company had earned substantial profits from mining from 1947-1964 and from its subsidiary thereafter, which more than offset the retroactive liability imposed by the government. See 524 U.S. at 516.

Second, the imposition of "arranger" liability in cases like *Fletcher Paint* will "interfere[] with reasonable investment backed expectations." *Eastern Enterprises*, 524 U.S. at 523-24. GE never owned or controlled the Fletcher site. Its sale of a product to FPW was entirely lawful and reasonable at the time it occurred. The sales ended in 1967, long before CERCLA was enacted, and long before FPW ceased its own commercial operations or stopped reselling Pyranol to other parties. There was no way GE could have known that FPW would ultimately be left with unsold inventory or that it would choose to mishandle drums of PCB material. The rationale of the *Fletcher Paint* decision threatens to upset the settled expectations of sellers that will be shocked to discover that CERCLA liability may arise from entirely lawful sales of useful products, based entirely on the unforeseeable misconduct of buyers occurring years after the commercial relationship has ended.

The imposition of liability in *Fletcher Paint* also contravenes the third *Eastern Enterprises* factor – "the character of the governmental action." 524 U.S. at 524. In *Eastern Enterprises*, the statute's remedial payment scheme was neither wholly unfamiliar to,

nor unforeseeable by, Eastern, which had operated its former coal mining business against the background understanding of a 1946 labor agreement, a 1947 retirement fund, and a 1950 benefit plan – all of which contained health care provisions for miners. *See* 524 U.S. at 505-08. Here, by contrast, the character of the governmental action is extraordinary. "[P]arties could not be expected to have foreseen CERCLA before it was enacted." *Purolator Prods. Corp. v. Allied-Signal, Inc.*, 772 F. Supp. 124, 132 (W.D.N.Y. 1991). There is no way that GE could have foreseen that it could one day be held liable for over $54 million in costs to clean up waste disposed of by FPW when that company abandoned its site. Even under the dissenting opinion in *Eastern Enterprise*, the imposition of CERCLA response costs pursuant to an expansive theory of "arranger" liability would be unconstitutional as applied in the *Fletcher Paint* case because GE is simply not *responsible* in any real sense for the expenses which it is being forced to bear. *See* 524 U.S. at 556-58, 566-68 (Breyer, J., joined by Stevens, Souter, and Ginsburg, JJ., dissenting).

At the very least, this Court should avoid an interpretation of CERCLA arranger liability that raises such serious constitutional questions. *See Ashwander v. TVA*, 297 U.S. 288, 348 (1936) (Brandeis, J., concurring).

CONCLUSION

The Ninth Circuit's judgment should be reversed, and this Court should prescribe the "sole purpose" test or a similarly restrictive standard for the imposition of "arranger" liability in the context of the sale of a useful product.

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November 24, 2008

AMICUS CURIAE BRIEF

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Nos. 07-1601 & 07-1607 (consolidated)

IN THE

Supreme Court of the United States

THE BURLINGTON NORTHERN AND SANTA FE RAILWAY COMPANY and UNION PACIFIC RAILROAD COMPANY,

Petitioners,

v.

UNITED STATES OF AMERICA, ET AL.,

Respondents.

SHELL OIL COMPANY,

Petitioners,

v.

UNITED STATES OF AMERICA, ET AL.,

Respondents.

ON WRITS OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

BRIEF OF NEWMONT USA LIMITED AND CANADIANOXY OFFSHORE PRODUCTION CO. AS *AMICI CURIAE* IN SUPPORT OF PETITIONERS

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Statement of Interest

Newmont USA Limited ("Newmont") and CanadianOxy Offshore Production Co. ("CanadianOxy") are defendants in lawsuits filed under the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. §§ 9601 et seq. Both companies are defendants in *Pinal Creek Group v. Newmont Min. Corp.*, No. CIV 91–1764 PHX–DAE (D. Ariz.), and Newmont is also a defendant in *United States v. Newmont USA Limited*, No. CV–5–020–JLQ (E.D. Wash.).[1]

Like the defendants in this case, *amici* face claims alleging joint-and-several liability. Unlike the federal government in this case, however, the plaintiffs in the litigation against *amici* are not innocent parties, but are themselves liable for CERCLA clean-up costs. In the litigation facing *amici*, the courts are considering a legal issue that is *not* raised by this case: whether plaintiffs that are themselves liable under CERCLA may seek joint-and-several recovery under Section 107 of CERCLA, 42 U.S.C. § 9607. *Amici's* sole interest here is to ensure that this Court does not inadvertently prejudge a significantly different legal issue that does not arise in this case.

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[1] Newmont and CanadianOxy submit this brief pursuant to the written consent of the parties, as reflected in the letters the parties have filed with the Clerk. No party or counsel for a party has authored this brief in whole or in part, and no person or entity other than Newmont and CanadianOxy have made a financial contribution to its preparation or submission.

Summary of Argument

In *United States v. Atlantic Research Corp.*, 127 S. Ct. 2331 (2007), this Court held that parties that have incurred cleanup costs and are liable under CERCLA, but have not yet been sued under CERCLA, may bring claims under Section 107(a) of the statute to recover an equitable portion of their costs. *Id.* at 2335–39. The Court did not decide whether such claims give rise to joint-and-several or several-only liability. *Id.* at 2339 n.7.

Amici are defendants in pending cases raising the question left open in *Atlantic Research*: whether *liable* parties ("PRPs," in CERCLA parlance) may pursue joint-and-several recovery under Section 107, or instead are limited to several-only recovery. That question is not at issue in the case now before the Court because the claims here were brought by an entirely innocent party: the United States, acting solely in its regulatory capacity. *Amici* therefore urge the Court to resolve the issues before it without prejudging the remedies that are available to PRPs seeking to recover from other PRPs.

Argument

Whether a culpable party, such as the plaintiffs in the cases facing *amici*, may assert joint and several liability is a question very different from the right of an innocent party to obtain such relief.

Section 107(a) of CERCLA allows "any . . . person" who has incurred "costs of response" to seek recovery of costs from an array of potentially responsible parties. 42 U.S.C. § 9607(a). The statute is silent, however, as to whether liability for such costs is

several or joint and several. *See Centerior Serv. Co. v. Acme Scrap Iron & Metal Corp.*, 153 F.3d 344, 350 (6th Cir. 1998) (Section 107 "does not specify whether these costs will arise from joint and several liability"). Thus, beginning with the seminal decision in *United States v. Chem-Dyne Corp.*, 572 F. Supp. 802 (S.D. Ohio 1983), courts have looked to "traditional and evolving principles of common law" as set out in the Restatement (Second) of Torts, "to avoid . . . universal application" of joint-and-several liability "to inappropriate circumstances." *Id.* at 808–10. A "blanket adoption of the joint and several liability standard . . . would be inconsistent with the legislative history of CERCLA." *Id.* at 810.

The common law requires at least two conditions before joint-and-several liability is appropriate: (1) the injured plaintiff must be entirely innocent; and (2) the harm must be indivisible. *See, e.g.*, Restatement (Second) of Torts § 433B cmt. d ("As between the proved tortfeasor who has clearly caused some harm, and the entirely innocent plaintiff, any hardship due to lack of evidence as to the extent of the harm caused should fall upon the former."); *The Atlas*, 93 U.S. 302, 306 (1876) ("common law creates a joint and several liability . . . because by a single and forcible act, which would not have happened except by the concurring negligence of two parties, an injury has been done to an innocent party"); *Coats v. Penrod Drilling Corp.*, 61 F.3d 1113, 1125 (5th Cir. 1995) ("concern that the innocent plaintiff receive full recovery" is "one of the primary justifications for joint and several liability").

The first condition is not at issue in this case because the plaintiff (the United States acting solely

in its regulatory capacity) is not alleged to have engaged in any wrongdoing. The United States is thus the quintessential innocent party. The sole question presented in this case is whether the harm is "indivisible" under the traditional standards of the common law. As petitioners argue, if the guidelines of the common law are abandoned, as they were by the Ninth Circuit, there will be no meaningful limit on the reach of CERCLA liability.

Although not at issue in this case, the distinct question whether *liable* parties may pursue joint-and-several recovery under Section 107 is percolating in the lower courts. In *Atlantic Research*, this Court held that liable parties that *have* incurred cleanup costs but have *not* been sued under CERCLA may bring claims under Section 107(a) to recover an equitable portion of their costs. 127 S. Ct. at 2335–39. The Court left for another day, however, the question whether such claims give rise to joint-and-several or several-only liability. *Id.* at 2339 n.7 ("We *assume without deciding* that § 107(a) provides for joint and several liability.") (Emphasis added). In the wake of *Atlantic Research*, liable parties asserting Section 107 claims have sought to pursue joint-and-several recovery. *Amici* are defendants in two such cases,[2] and other similar cases are

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[2] In *Pinal Creek Group v. Newmont Mining Corp.*, No. CIV 91–1764 PHX–DAE (D. Ariz.), two plaintiffs that are admittedly liable for the contamination (and in fact were sued by and settled with the State of Arizona) have moved for reconsideration of a prior order restricting them to several-only recovery against *amicus* CanadianOxy. Although the district court denied the motion, it certified the question for interlocutory appeal pursuant to 28 U.S.C.

pending.[3]

At common law, in cases brought by one tortfeasor against other tortfeasors, each is responsible only for its equitable portion of the harm. *See* Restatement (Second) of Torts § 886A(1) ("when two or more persons become liable . . . for the same harm, there is a right of contribution among them"); *id.* § 886A(2) ("No tortfeasor can be required to make contribution beyond his own equitable share of the liability."). As this Court has recognized in another context, the rationale for imposing joint-and-several liability disappears when the plaintiff itself is a liable party. *See Northwest Airlines, Inc. v. Transport Workers Union of Am.*, 451 U.S. 77, 88 (1981) ("when two or more persons share responsibility for a wrong, it is inequitable to require one to pay the entire cost of reparation, and it is sound policy to

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§ 1292(b). A petition for permission to appeal is pending before the Ninth Circuit.

In *United States v. Newmont USA Limited*, No. CV–05–020–JLQ, (E.D. Wash), Newmont was recently held jointly and severally liable for two-thirds of the cleanup costs even though the plaintiff (the United States) was itself found liable for one-third of the costs. Newmont plans to file an appeal in that matter.

[3] *E.g.*, *In re Dana Corp.*, 379 B.R. 449 (S.D.N.Y. 2007) (granting motion to withdraw the reference from bankruptcy court to allow the district court to determine if the federal government could pursue joint-and-several liability under Section 107 where it was alleged to be a liable party); *Raytheon Aircraft Co. v. United States*, 532 F. Supp. 2d 1306 (D. Kan. 2007) (allowing PRP to allege joint-and-several liability against the federal government).

deter all wrongdoers by reducing the likelihood that any will entirely escape liability").

Consistent with the common law, the circuit courts thus far have limited liable parties to several-only recovery under Section 107. *See, e.g., Atl. Research Corp. v. United States*, 459 F.3d 827, 835 (8th Cir. 2006) ("a liable party may not use § 107 to recover its full response cost"), *aff'd*, 127 S. Ct. 2331 (2007); *Pinal Creek Group v. Newmont Min. Corp.*, 118 F.3d 1298, 1306 (9th Cir. 1997) (under either Section 107 or 113 of CERCLA, "a PRP does not have a claim for the recovery of the totality of its cleanup costs against other PRPs, and a PRP cannot assert a claim against other PRPs for joint and several liability"), *overruled in part on other grounds, Kotrous v. Goss-Jewett Co.*, 523 F.3d 924 (9th Cir. 2008). No circuit has authorized PRPs to recover jointly and severally from other PRPs under Section 107 of CERCLA.

Because of this precedent and the clarity of the common law, *amici* expect that other courts facing claims by PRP plaintiffs will likewise limit any recovery to several-only relief. Because the present case does not raise the issue, however, *amici* merely urge the Court to tailor its language and analysis in this case to avoid inadvertently prejudging the issue.

Conclusion

The Court should resolve the issues raised in this case without prejudging the distinct question of the remedies available under Section 107 of CERCLA to PRPs that seek recovery from other PRPs.

Respectfully submitted,

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November 24, 2008

AMICUS CURIAE BRIEF

Supreme Court, U.S.
FILED
NOV 2 1 2008
OFFICE OF THE CLERK

No. 07-1607, 07-1601 (Consolidated)

IN THE

Supreme Court of the United States

SHELL OIL COMPANY,

Petitioner,

v.

UNITED STATES OF AMERICA, ET AL.

Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Ninth Circuit

BRIEF OF *AMICUS CURIAE* PRODUCT LIABILITY ADVISORY COUNCIL, INC. IN SUPPORT OF PETITIONER SHELL OIL COMPANY

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BRIEF OF PRODUCT LIABILITY ADVISORY COUNCIL, INC. AS *AMICUS CURIAE* IN SUPPORT OF PETITIONER

INTEREST OF THE *AMICUS CURIAE*

Product Liability Advisory Council, Inc. ("PLAC") is a non-profit association with 125 corporate members (including Shell Oil Company, a Petitioner here) representing a broad cross-section of American and international product manufacturers. These companies seek to contribute to the improvement and reform of the law in the United States and elsewhere, with emphasis on the law governing the liability of manufacturers of products. PLAC's perspective is derived from the experiences of a corporate membership that spans a diverse group of industries in various facets of the manufacturing sector. Since 1983, PLAC has filed over 725 briefs as *amicus curiae* in both state and federal courts, including this Court, presenting the broad perspective of product manufacturers seeking fairness and balance in the application and development of the law as it affects product liability. Appendix A lists PLAC's corporate members.

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[1] No counsel for a party authored this brief in whole or in part, and no counsel or party made a monetary contribution intended to fund the preparation or submission of this brief. No person other than *amicus curiae* or its counsel made a monetary contribution to its preparation or submission. The parties have consented to the filing of this brief.

INTRODUCTION

The Ninth Circuit held a product manufacturer liable under the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA") for having "arranged for disposal . . . of hazardous substances" because a commercial carrier, after the sale of the product, unintentionally spilled a minute portion of the product at the buyer's facility. Based on this tenuous connection, the Ninth Circuit held the manufacturer jointly and severally liable for all contamination at the site—including contamination from products never manufactured or sold by the company. As the eight judges who dissented from the Ninth Circuit's denial of *en banc* review declared, the panel's decision is "novel and unprecedented." *United States v. Burlington N. & Santa Fe Ry. Co.*, 520 F.3d 918, 952 (9th Cir. 2008) (Bea, J., dissenting from denial of rehearing en banc).

The Ninth Circuit's decision should be reversed. The Ninth Circuit's interpretation of CERCLA cannot be squared with the text of the statute. Rather than interpreting the statute according to its ordinary meaning, in deference to the common-law and with disfavor toward retroactive laws, the Ninth Circuit imposed limitless and uncontrollable liability for manufacturers, without any indicia of congressional intent. The Ninth Circuit's distortion of the meaning of "arranger liability" is modern alchemy, transmuting language of limitation into a pot of gold for the Government.

Moreover, this Court may bring national uniformity to this important area of law only by rejecting the case-by-case multi-factor analysis dictated by the Ninth Circuit's opinion. The courts of appeals have struggled to no avail for almost three

decades to find a common definition of arranger liability. The steady, incremental expansion of liability far beyond the language or purpose of the statute is likely to continue unless the Court bases its decision on the statutory language. This Court should reverse the Ninth Circuit and apply a bright-line rule that requires purposeful intent to dispose of hazardous substances.

BACKGROUND

Shell did not own or operate the facility that is now a Superfund Site. It did not dispose of hazardous substances there. Shell's only connection to the contaminated facility was as the manufacturer and seller over a number of years of the soil fumigant D-D, which is used to kill microscopic worms that attack the roots of crops. D-D was not a waste product, but a valuable and useful commercial product used safely by farmers for decades. D-D was transported to the facility by common carrier trucks, FOB destination. A condition of sale was that the buyer was responsible for the product when it arrived at the facility. *United States v. Atchison, Topeka & Santa Fe Ry. Co.*, Nos. CV-F-92-5068, *et al.*, 2003 WL 25518047, at *5 (E.D. Cal. 2003) (citing Ex. 1199, Conditions of Sale, at 7, section 3).

The district court found that the only releases remotely connected to Shell were from occasional drips and spills of D-D during commercial carriers' transfer of the product at the buyer's facility. Shell was aware that drips could occur and provided instructions to the buyer for safe handling. While the district court found that some drips during the transfer into the buyer's storage tanks were unavoidable, it concluded that the drips were usually

captured as they occurred in five-gallon buckets. *Atchison*, 2003 WL 25518047, at *20. The process of transferring D-D from delivery trucks to the operator's tanks resulted in small quantities of D-D reaching the ground when the carrier or buyer failed to secure or tipped over the buckets. *Id.* at *21, *22. Moreover, the district court found that, even when D-D was spilled, the product would harmlessly evaporate from the soil unless water was present. *Id.* at *9, *13. Significantly more spills, leaks and contamination, however, were due to the operator's subsequent transfer and uses of D-D and other chemicals. *Id.* at *5-9. Here, it is undisputed that 99% of the chemical mass in the groundwater was from the waste pond and sump where the operator rinsed its equipment. *Id.* at *12. Shell had no connection to this contamination source. The court found that the facility owner "was a sloppy operator." *Id.* at *26.

Over the course of several years, the EPA performed both removal and remediation at the site and sought cost recovery from Shell. Although it is acknowledged that any contamination created by spilled buckets during the transfer of D-D into the buyer's storage tanks was at most a minor contribution to the contamination, the EPA sought to hold Shell jointly and severally liable for the entire cost of the removal and remediation, including products never sold by Shell. Expanding the Ninth Circuit's already "broad" application of arranger liability, the district court found Shell liable, but limited damages to an approximate determination of Shell's small contribution.

Reversing the district court's apportionment of liability, the Ninth Circuit imposed joint and several liability on Shell. Without explaining or adopting a standard of arranger liability, the court stated that the seller of a new product can be an arranger under CERCLA "even if it did not intend to dispose of the product." *Burlington*, 520 F.3d at 949. The court also held that neither control nor ownership at the time of disposal is required, but that those factors are merely "useful indices or clues" for the court to examine. *Id.* at 951. Because Shell owned the product at the time of the sale (although not at the time of the drips), hired a carrier to deliver the product, knew that drips could occur, and provided product instructions for safe handling, the Ninth Circuit upheld Shell's liability as an arranger for disposal. *Id.*

Judge Bea wrote a vigorous dissent from the court's denial of rehearing en banc because "the panel's broad definition of arranger liability . . . impose[s] CERCLA liability where Congress did not intend." *Id.* at 963 (Bea, J., dissenting from denial of rehearing en banc). The dissent contended that, "[b]y imposing arranger liability on a mere seller, the panel stretches the meaning of arranger liability beyond any cognizable limit and creates inter-circuit splits." *Id.* at 961. The dissent recognized that the panel's expansive definition of arranger liability will force product manufacturers to become insurers not only of their products, but also of the sites through which the products may travel, long after the seller has relinquished control. *See id.* at 963.

ARGUMENT

I. ARRANGER LIABILITY SHOULD REQUIRE A PURPOSEFUL INTENT TO DISPOSE OF A HAZARDOUS SUBSTANCE.

A. The Plain Language Of CERCLA Limits Arranger Liability To Intended Disposal.

Although broad, CERCLA is not a limitless statute. CERCLA creates strict liability for specified classes of persons and applies retroactive liability only to those individuals within its reach. CERCLA liability, however, is not and was not intended to be imposed indiscriminately. Congress specifically limited the actors who could be held liable to four classes of persons, including "any person who by contract, agreement, or otherwise *arranged for disposal* . . . of hazardous substances . . . ." 42 U.S.C. § 9607(a)(3) (emphasis added). Without these limitations on persons potentially liable, CERCLA liability literally would be unlimited (and unconstitutional).

In interpreting CERCLA, this Court has turned to the plain meaning of the statutory language. In *Cooper Industries, Inc. v. Aviall Services, Inc.*, 543 U.S. 157 (2004), the Court interpreted the contribution provision of the amended statute to adopt the "natural meaning of th[e] sentence" that contribution may only be sought subject to the specified conditions. *Id.* at 166. When both parties argued that the purpose of CERCLA bolstered its reading of the provision, this Court stated that, "[g]iven the clear meaning of the text, there is no need to resolve this dispute or to consult the purpose of CERCLA at all." *Id.* at 167 (also quoting *Oncale v. Sundowner Offshore Servs., Inc.*, 523 U.S. 75, 79 (1998) ("[I]t is ultimately the provisions of our laws

rather than the principal concerns of our legislators by which we are governed.").[2]

Likewise, when faced with the meaning of "operator" liability under CERCLA, this Court looked to the "ordinary or natural meaning" of the term. *United States v. Bestfoods*, 524 U.S. 51, 66 (1998) (quoting *Bailey v. United States*, 516 U.S. 137, 145 (1995)). Consulting the American Heritage and Webster's New International Dictionaries, the Court concluded that "an operator is simply someone who directs the workings of, manages or conducts the affairs of a facility" and in a CERCLA context, "an operator must manage, direct, or conduct operations specifically related to pollution." *Id.*; *see also United States v. Atl. Research Corp.*, 551 U.S. ___, 127 S. Ct. 2331, 2336, 2339 (2007) (holding that under CERCLA the "plain language . . . authorizes cost recovery actions by any private party, including [Potentially Responsible Parties]").

The ordinary or natural meaning of the statutory language here precludes a company like Shell from being held liable as an "arranger." The operative phrase—"arranged for disposal"—requires purposeful action. According to the American Heritage Dictionary of the English Language, the word "arrange" means "to plan or prepare for." THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH

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[2] In fact, one's view of the "purpose" of CERCLA depends on the eye of the beholder. It can be used either to support limitless expansion of liability beyond the terms of the statute itself in furtherance of broad environmental goals, or to support a limitation of liability to those situations that prompted the legislation itself, classic disposal sites like Love Canal. Consequently, reference to the "purpose" of CERCLA begs the question.

LANGUAGE: FOURTH EDITION 99 (2006); *see also* WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY OF THE ENGLISH LANGUAGE 120 (2002) ("arrange" means "to make preparations" to "plan"). The word "for" is used to "indicate the object, aim, or purpose of an action or activity." AMERICAN HERITAGE DICTIONARY: FOURTH EDITION 686; *see also* WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 886 ("For" means "as a preparation toward."). In other words, the language of the statute literally requires the defendant to have made plans with the purpose of disposal.

The language cannot be read, as the Ninth Circuit held, to allow liability for a person who sold a product—not for the purpose of disposal, but for productive and permitted uses—where the common carrier or operator accidentally spilled the product at the buyer's facility. Although unintentional spills could be read to constitute "disposal," Congress limited liability to those who " 'arrange for' disposal (not just arranged for the sale)." *Burlington*, 520 F.3d at 961 (Bea, J., dissenting from denial of rehearing en banc). To give the words "arrange for" any meaning, the Court should require a purposeful intent to dispose, not merely knowledge that some product may not be used as intended.[3] *See, e.g.*,

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[3] It is difficult to see how the fact that "disposal" includes unintentional spillage has any relevance to this case. The drips from the transfer itself did not cause any contamination, as the drips were collected in a bucket and were supposed to be dumped into the storage tanks for use. The "disposal" of the product occurred only when the carrier or the buyer knocked over the buckets. Shell, however, had no involvement or connection with knocking these buckets over and cannot be said to have "arranged for" these buckets to be knocked over. Shell also had nothing to do with other "sloppy" practices of the

Cooper Indus., 543 U.S. at 166 (rejecting, in CERCLA context, a "reading [that] would render part of the statute entirely superfluous, something we are loath to do"); *Rake v. Wade*, 508 U.S. 464, 471 (1993) ("To avoid 'deny[ing] effect to a part of a statute,' we accord 'significance and effect. . . to every word.'") (citation omitted). As the dissent from rehearing en banc persuasively argued, "[i]t is an oxymoron for an entity *unintentionally* to make preparations for disposal." *Burlington*, 520 F.3d at 961 (Bea, J., dissenting from denial of rehearing en banc).

The Seventh Circuit addressed "arranger" liability in an almost identical situation as here, but followed the statutory language to conclude that a person who arranged for the sale and transport of a consumer product did not "arrange for disposal" of that product when some spilling occurred. *Amcast Indus. Corp. v. Detrex Corp.*, 2 F.3d 746, 751 (7th Cir. 1993). The court, in an opinion by Judge Posner, held, "Detrex hired a transporter, all right, but it did not hire it to spill TCE on Elkhart's premises. Although the statute defines disposal to include spilling, the critical words for present purposes are 'arranged for.' The words imply intentional action." *Id.* The court concluded that, though the defendant manufacturer arranged for the delivery of the product, it did not arrange "for spilling the stuff on the ground." Therefore, the manufacturer had no arranger liability. *Id.* As the court held, "[n]o one arranges for an accident, except in the sinister sense, not involved

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(continued...)

operator that largely caused any contamination here. In fact, it provided information on safe handling of its chemicals.

here, of 'staging' an accident—that is, causing deliberate harm but making it seem accidental." *Id.* Other courts, likewise, have come to similar conclusions regarding the statute's language. *See, e.g., Pneumo Abex Corp. v. High Point, Thomasville & Denton R.R. Co.*, 142 F.3d 769, 775 (4th Cir. 1998) (no arranger liability because "intent" was not for the "treatment" of hazardous substances); *United States v. Cello-Foil Prods., Inc.*, 100 F.3d 1227, 1231 (6th Cir. 1996) (arranger liability requires person to have "intended to enter into a transaction that included and 'arrangement for' the disposal of hazardous substances"). *But see United States v. Aceto Agric. Chems. Corp.*, 872 F.2d 1373 (8th Cir. 1989) (holding the manufacturer, who maintained ownership of the product throughout the processing that resulted in disposal (unlike Shell) liable regardless of intent to dispose).

The Ninth Circuit's opinion contradicts the plain language of the statute and the reasoned analysis of the courts that have required purposeful intent in arranging for disposal. Not only did the Ninth Circuit disavow any intent requirement for arranger liability, the court also rejected the notion that ownership or control of the product at the time of disposal was required. The Ninth Circuit did not follow the statutory language; "arranged for disposal" are words of limitation and definition read out of the statute by the Ninth Circuit analysis. The Ninth Circuit merely concluded that owning the product before the sale (as every manufacturer necessarily does) and knowing that drips and spills may occur (which is why Shell advised that precautions be used) is enough to subject the manufacturer to liability. CERCLA's extraordinary

liability should not be permitted on such a flimsy, innocent ground, at odds with the statutory text.

The categories of covered persons under CERCLA are in fact limitations on liability, and the plain language of the statute provides at least one bright-line rule for arranger liability. This Court should provide much needed predictability and uniformity in CERCLA jurisprudence by concluding that the sale of a useful product is beyond the reach of arranger liability.

B. The Common Law Would Not Permit Manufacturer Liability For The Sale Of A Useful Product Spilled By Others.

The Court should not expand arranger liability in a way that disrupts preexisting law and imposes retroactive liability without a clear expression of congressional intent to do so. Where a statute imposes harsh remedial consequences on persons within its purview, courts should strictly construe the individuals covered by the statute and not seek to expand its coverage beyond the explicit text. *See, e.g.*, 3 NORMAN J. SINGER, STATUTES AND STATUTORY CONSTRUCTION § 61.3 (2001) (citing *In re W.W.*, 454 N.E.2d 207, 209 (Ill. 1983) (reasoning that a statute with remedial features should be strictly construed when determining what persons come within its operation)). The Ninth Circuit erred in construing the statute in favor of the Government and toward more expansive liability, rather than with deference to pre-existing law and the rights of individuals.

First, the Ninth Circuit erred by failing to recognize the legal background under which CERCLA was drafted. As this Court has recognized, statutes are not drafted in a vacuum, but with

knowledge of pre-existing legal principles. *United States v. Texas*, 507 U.S. 529, 534 (1993) ("Congress does not write upon a clean slate"). "'Statutes which invade the common law . . . are to be read with a presumption favoring the retention of long-established and familiar principles, except when a statutory purpose to the contrary is evident.'" *Id.* (quoting *Isbrandtsen Co. v. Johnson*, 343 U.S. 779, 783 (1952)) (ellipsis in original); *see also Viera v. Cohen*, 927 A.2d 843, 853 (Conn. 2007) ("[T]he operation of a statute in derogation of the common law is to be limited to *matters clearly brought within its scope.*") (emphasis added) (quoting *Matthiessen v. Vanech*, 836 A.2d 394, 405 (Conn. 2003) (quoting *Alvarez v. New Haven Register, Inc.*, 735 A.2d 306 (Conn. 1999); *Phillips v. Larry's Drive-In Pharmacy, Inc.*, 647 S.E.2d 920, 928 (W. Va. 2007) ("[W]here there is any doubt about the meaning or intent of a statute in derogation of the common law, the statute is to be interpreted in the manner that makes the least rather than the most change in the common law.").

While CERCLA undoubtedly did derogate the common law in some important aspects, for example, imposing strict liability on current property owners regardless of intent or involvement in the contamination, the Court cannot conclude that Congress cast aside *all* common-law principles of liability. "In order to abrogate a common-law principle, the statute must 'speak directly' to the question addressed by the common law." *United States v. Texas*, 507 U.S. at 534. Again, in *Bestfoods*, this Court recognized in the context of CERCLA that Congress still must make clear its intention to abrogate specific common-law principles. *See*

Bestfoods, 524 U.S. at 62 ("[N]othing in CERCLA purports to reject this bedrock principle, [that a parent corporation is not liable for the acts of its subsidiaries] and against this venerable common-law backdrop, the congressional silence is audible."). There, the Court held that a relaxed CERCLA-specific rule for derivative liability could not be read into the statute because it would "banish traditional standards and expectations from the law of CERCLA liability . . . . [S]uch a rule does not rise from congressional silence, and CERCLA's silence is dispositive." *Id.* at 70. *Cf. Key Tronic Corp. v. United States*, 511 U.S. 809 (1994) (requiring congressional intent to alter the American rule that attorney fees related to litigation under CERCLA are not recoverable).

The common-law precursors to CERCLA, such as nuisance,[4] would not have countenanced liability to product sellers such as Shell. Common-law nuisance requires control over the product at the time any harm occurred. *See, e.g., State of Rhode Island v. Lead Indus. Ass'n, Inc.*, __ A.2d __, 2008 WL 2605396, at *15 (R.I. July 1, 2008) ("As an additional prerequisite to the imposition of liability for public nuisance, a defendant must have control over the instrumentality causing the alleged nuisance at the time the damage occurs.") (emphasis omitted); *see also* 2 AMERICAN LAW OF PRODUCTS LIABILITY 3D § 27.6 (2007) ("[A] product manufacturer who builds and sells the product and does not control the enterprise in which it is used is not in the situation of one who creates a nuisance . . . .").

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[4] *See, e.g., Illinois v. City of Milwaukee*, 406 U.S. 91, 106-07 (1972) (noting that common-law public nuisance is used to regulate environmental pollution).

In addition, for liability to attach, a defendant's conduct must be "intentional and unreasonable" or "unintentional and otherwise actionable under the rules controlling liability for negligent or reckless conduct, or for abnormally dangerous conditions or activities." RESTATEMENT (SECOND) OF TORTS § 822 (1977 & Supp. 2008). There was no finding of legal duty or reckless or dangerous activities by Shell to justify unintentional liability. Nor could there have been. Shell merely sold a product and provided guidance for safe handling. As there is no clear indication that Congress intended to change the common law and sweep product sellers like Shell into CERCLA under arranger liability, the court should have construed the statute in Shell's favor and not with an eye toward filling the Government's coffers.

Second, the Court should not interpret CERCLA arranger liability—which would apply retroactively—to encompass a new category of product sellers or manufacturers in the absence of specific congressional intent. As this Court has stated, retroactivity of legislation is disfavored and will not be applied unless expressly directed by Congress. "[T]he presumption against retroactive legislation is deeply rooted in our jurisprudence, and embodies legal doctrine centuries older than our Republic. . . . [T]he 'principle that the legal effect of conduct should ordinarily be assessed under the law that existed when the conduct took place has timeless and universal appeal.'" *Landgraf v. USI Film Prods.*, 511 U.S. 244, 265 (1994) (footnote omitted) (quoting *Kaiser Aluminum & Chem. Corp. v. Bonjorno*, 494 U.S. 827, 855 (1990) (Scalia, J., concurring)). Applying a statute retroactively "presents problems of unfairness . . . because it can deprive citizens of

legitimate expectations and upset settled transactions." *Gen. Motors Corp. v. Romein*, 503 U.S. 181, 191 (1992). Retroactive laws are particularly unfair when the government's actions "affect[] contractual or property rights, matters in which predictability and stability are of prime importance." *Landgraf*, 511 U.S. at 271.

Imposing retroactive liability on a manufacturer as an arranger, where the manufacturer has merely sold and transferred its product without any intent for disposal and no longer has ownership, possession, control, or further interest in the product, defeats the settled expectations of the seller. Shell shipped the product in question FOB destination with an understanding and agreement that the buyer take responsibility for the product when it arrived at the facility. *Atchison*, 2003 WL 25518047, at *5. While Congress certainly has some power to disrupt the commercial expectations between the buyer and seller, courts should not assume that Congress intended to discard these time-honored commercial principles and retroactively impose new, staggering burdens—without saying so.[5] *See Landgraf*, 511 U.S. at 284 (noting that the Court will not read a statute "substantially increasing the monetary liability of a

[5] In fact, Congress imposed specific taxes on chemical manufacturers, requiring them to make a contribution to Superfund. *See* 26 U.S.C. §§ 4611, 4661 & 4662. These provisions indicate that Congress did not intend to extend arranger liability to cover past typical sales transactions, but instead intended to recoup costs of environmental clean-up through a direct levy. Had Congress intended to hold companies liable for the mere manufacture or sale of hazardous substances that were spilled in transit or during storage, it would have said so. There is no such category of CERCLA liability.

private party to apply to conduct occurring before the statute's enactment" when Congress had not clearly spoken). The Ninth Circuit should have construed the statutory language to avoid any retroactive, due process concerns.[6]

Ramifications of the Ninth Circuit's decision, if upheld, would extend beyond CERCLA. It could disrupt commercial transactions, increase prices of necessary products, and impact insurance premiums. A product manufacturer who had only minimal contact with a facility would face millions of dollars of liability for a single clean-up. For example, under the court's opinion, a company that sells a storage tank is potentially liable under CERCLA for "arranging for disposal" of a hazardous substance if it knows that the contents of the tank will inevitably drip and spill onto the ground. Additionally, imposing CERCLA liability because a manufacturer provided safety and handling instructions for its chemical products penalizes, rather than promotes, good business practices. *See Jordan v. S. Wood Piedmont Co.*, 805 F. Supp. 1575, 1580 (S.D. Ga. 1992) ("[I]mpos[ing] liability on a manufacturer on account of its dissemination of safety-related

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[6] Courts have concluded that CERCLA is within the limits of Congress's power because the imposed liability is proportionate and related directly to prior acts of pollution. *See Franklin County Convention Facilities Auth. v. Am. Premier Underwriters, Inc.*, 240 F.3d 534, 553 (6th Cir. 2001) (concluding that CERCLA's retroactive liability did not violate the Takings Clause because, as applied, the liability was "directly proportional to [defendant's] prior acts of pollution" and the defendant had expressly assumed liability for environmental harms) (emphasis added). Here, the outer limits of constitutionally permissible retroactive liability are being tested, if not trespassed.

information is anathematic, even to the broad and salutary remedial purposes of CERCLA."). *Cf. R.R. St. & Co. v. Pilgrim Enters., Inc.*, 166 S.W.3d 232, 246 (Tex. 2005) ("Imposing arranger liability on chemical manufacturers and suppliers for providing technical services and advice will have the adverse effect of discouraging these companies from providing valuable advice to customers regarding the safe use and handling of their products."). This extraordinary liability under CERCLA based on the Ninth Circuit's unjustified definition of arranger liability should not be permitted.

In short, there is no ambiguity in the statutory language that would allow courts to sweep in product manufacturers such as Shell under arranger liability. Such liability was unknown under the common law and retroactively would foist mammoth and unexpected legal responsibilities on product manufacturers. These results should be presumed *not to occur* unless Congress specifically and clearly requires them, and it has not. This Court should adhere to CERCLA's categories of liability as written and restore reason and logic to CERCLA jurisprudence.

II. THE COURT SHOULD INTERPRET CERCLA IN A MANNER THAT CREATES UNIFORMITY AND CONSISTENCY.

No other circuit has interpreted arranger liability as expansively as the Ninth Circuit, and no other would permit arranger liability based on the sale of a product alone. But even among the courts that would reject the Ninth Circuit's expansive application of arranger liability, the courts of appeals are confused as to the scope and proper interpretation of arranger

liability. Courts and commentators have long lamented the inconsistent application of arranger liability based on the multitude of different factors. *See* Roger K. Ferland & Marilyn D. Cage, *Using RCRA to Interpret CERCLA Liability: What is "Arranging For Disposal"?*, 23 ARIZ. ST. L.J. 445, 447 (1991) ("[T]he lack of guidance has resulted in a myriad of interpretations of "arranged for" liability that has been both inconsistent and confusing."); *see also* Sarah E. Stevenson, Casenote, *Broadening Arranger Liability Under Alaska State Law: The Ninth Circuit's Interpretation of* Berg v. Popham, 17 VILL. ENVTL. L.J. 477, 511 (2006) ("Interpreting arranger liability provisions has plagued both state and federal courts for the past twenty-five years.").

Courts have struggled to interpret arranger liability consistently since CERCLA was passed almost three decades ago. Most courts have promulgated non-exhaustive factors to examine. *See, e.g., Morton Int'l, Inc. v. A.E. Staley Mfg. Co.*, 343 F.3d 669, 676 (3d Cir. 2003) (citing cases from the Second, Fourth, Fifth, Sixth, Seventh, Eighth, Ninth and Eleventh Circuits in an attempt to set a standard). The variety of non-exhaustive, non-dispositive factors has created a unique, *ad hoc* determination so that outcomes differ from case to case and from circuit to circuit.

The Third Circuit, for example, adopted a standard that requires the plaintiff to demonstrate (1) ownership or possession, and (2) either knowledge or control. *Id.* at 677. But, the court also conceded that "[i]t is certainly possible that other factors could be relevant to this analysis in any given case, and we encourage consideration of those as well." *Id.* at 679;

see also United States v. Hercules, Inc., 247 F.3d 706, 721 (8th Cir. 2001) (declining to adopt a "bright-line" rule and instead examining the totality of the circumstances to determine whether the facts of a given case fit within CERCLA's scheme); *Fla. Power & Light Co. v. Allis Chalmers Corp.*, 893 F.2d 1313, 1319 (11th Cir. 1990) (rejecting a *per se* rule in interpreting CERCLA liability); and Stevenson, *supra*, at 497 (noting that to determine liability some courts will examine multiple factors including "strict liability, specific intent, totality of circumstances, obligation to control, and actual involvement"). As the Ninth Circuit's decision demonstrates, these *ad hoc* determinations tend to build on one another, leading the courts far afield from the statutory language itself.

Notwithstanding the courts' inability to agree on how to interpret arranger liability, the courts do agree that national uniformity in this area is absolutely necessary. *Burlington*, 520 F.3d at 935 (citing cases regarding the need for uniformity in the application of joint and several liability under CERCLA). Uniformity is required to allow corporations and individuals plan for and protect against unintended arranger liability. Indeed, uncertainty and inconsistency breed only unfair settlements and costly litigation.

Under the *status quo*, it is impossible to determine the circumstances under which selling a product could lead to arranger liability—no small inconvenience considering CERCLA's harsh consequences—and impossible to tailor one's prospective behavior to accord with the law. The only way to achieve consistency and uniformity is to reject

the application of multi-factor, non-exclusive analyses and interpret the statute according to its plain meaning. The Court should apply a bright-line rule that arranger liability attaches only when the defendant has the purposeful intent to dispose of hazardous substances.

CONCLUSION

The Court should reverse the judgment of the Ninth Circuit.

Respectfully submitted,

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November 21, 2008

APPENDIX

APPENDIX A

PLAC CORPORATE MEMBERS

3M
Altec Industries
Altria Corporate Services, Inc.
American Suzuki Motor Corporation
Andersen Corporation
Anheuser-Busch Companies
Appleton Papers, Inc.
Arai Helmet, Ltd.
Astec Industries
BASF Corporation
Bayer Corporation
Beretta U.S.A. Corp.
BIC Corporation
Biro Manufacturing Company, Inc.
Black & Decker (U.S.) Inc.
BMW of North America, LLC
Boeing Company
Bombardier Recreational Products
BP America Inc.
Bridgestone Americas Holding, Inc.
Briggs & Stratton Holding, Inc.
Brown-Forman Corporation
CARQUEST Corporation
Caterpillar Inc.
Chrysler LLC
Continental Tire North America, Inc.
Cooper Tire and Rubber Company
Coors Brewing Company
Crown Equipment Corporation
Daimler Trucks North America LLC

The Dow Chemical Company
E.I. DuPont De Nemours and Company
Easton-Bell Sports, Inc.
Eaton Corporation
Eli Lilly and Company
Emerson Electric Co.
Engineered Controls International, Inc.
Estee Lauder Companies
Exxon Mobil Corporation
Ford Motor Company
Genentech, Inc.
General Electric Company
General Motors Corporation
GlaxoSmithKline
The Goodyear Tire & Rubber Company
Great Dane Limited Partnership
Harley-Davidson Motor Company
Hawker Beechcraft Corporation
The Heil Company
Honda North America, Inc.
Hyundai Motor America
Illinois Tool Works, Inc.
International Truck and Engine Corporation
Isuzu Motors America, Inc.
Jarden Corporation
Johnson & Johnson
Johnson Controls, Inc.
Joy Global Inc., Joy Mining Machinery
Kawasaki Motors Corp., U.S.A.
Kia Motors America, Inc.
Koch Industries
Kolcraft Enterprises, Inc.
Komatsu America Corp.
Kraft Foods North America, Inc.

Leviton Manufacturing Co., Inc.
Lincoln Electric Company
Magna International Inc.
Mazda (North America), Inc.
Medtronic, Inc.
Merck & Co., Inc.
Michelin North America, Inc.
Microsoft Corporation
Mine Safety Appliances Company
Mitsubishi Motors North America, Inc.
Mueller Water Products
Nintendo of America, Inc.
Niro Inc.
Nissan North America, Inc.
Nokia Inc.
Novartis Consumer Health, Inc.
Novartis Pharmaceuticals Corporation
Occidental Petroleum Corporation
PACCAR Inc.
Panasonic
Pfizer Inc.
Porsche Cars North America, Inc.
PPG Industries, Inc.
Purdue Pharma L.P.
Putsch GmbH & Co. KG
The Raymond Corporation
Remington Arms Company, Inc.
Rheem Manufacturing
RJ Reynolds Tobacco Company
Sanofi-Aventis
Schindler Elevator Corporation
SCM Group USA Inc.
Shell Oil Company
The Sherwin-Williams Company

Smith & Nephew, Inc.
St. Jude Medical, Inc.
Subaru of America, Inc.
Synthes (U.S.A.)
Terex Corporation
Textron, Inc.
TK Holdings Inc.
The Toro Company
Toshiba America Incorporated
Toyota Motor Sales, USA, Inc.
TRW Automotive
UST (U.S. Tobacco)
Vermeer Manufacturing Company
The Viking Corporation
Volkswagen of America, Inc.
Volvo Cars of North America, Inc.
Vulcan Materials Company
Watts Water Technologies, Inc.
Whirlpool Corporation
Wyeth
Yamaha Motor Corporation, U.S.A.
Yokohama Tire Corporation
Zimmer, Inc.

AMICUS CURIAE BRIEF

113 (11) (17)

Nos. 07-1601, 07-1607 (Consolidated)

Supreme Court, U.S.
FILED
NOV 24 2008
OFFICE OF THE CLERK

IN THE

Supreme Court of the United States

THE BURLINGTON NORTHERN AND SANTA FE RAILWAY COMPANY AND UNION PACIFIC RAILROAD COMPANY,
Petitioners,

v.

UNITED STATES OF AMERICA, ET AL.,
Respondents.

SHELL OIL COMPANY,
Petitioner,

v.

UNITED STATES OF AMERICA, ET AL.,
Respondents.

On Writs of Certiorari to the United States Court of Appeals for the Ninth Circuit

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WILSON-EPES PRINTING CO., INC. – (202) 789-0096 – WASHINGTON, D. C. 20002

BOTH 47BRVX

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INTERESTS OF AMICUS CURIAE

The Washington Legal Foundation (WLF)[1] is a non-profit public interest law and policy center with supporters nationwide. WLF devotes a significant portion of its resources to promoting economic liberty, free enterprise principles, and a limited and accountable government. WLF regularly appears as amicus curiae in the Supreme Court and lower federal courts in cases raising important statutory and constitutional issues, including environmental and other regulatory cases under the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), 42 U.S.C. 9607. *See, e.g., United States v. Bestfoods, Inc.*, 524 U.S. 51 (1998); *United States v. Hercules, Inc.*, 247 F.3d 706 (8th Cir. 2001); *United States v. Alcan Aluminum Corp.*, 315 F.3d 179 (2d Cir. 2003) (Alcan II).

WLF believes that the lower courts have failed to follow the intent of Congress in assigning liability under CERCLA and have unfairly imposed joint and several liability on American businesses and municipalities. The process used by the courts is result driven and lack reasonable standards. The Ninth Circuit's decision is a textbook example of how this process is fundamentally flawed, and thus demands reversal by this Court.

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[1] Pursuant to Supreme Court Rule 37.6, amicus curiae state than no counsel for a party authored this brief in whole or in part, and that no person or entity, other than amicus Washington Legal Foundation and their counsel, contributed monetarily to the preparation and submission of this brief. By letters filed with the Clerk of the Court, the parties have consented to the filing of this brief.

SUMMARY OF ARGUMENT

It is beyond dispute that the role of our judiciary is not to make law, but to interpret it. This is especially true in the context of congressional statutes where Congress has made explicit policy choices. Absent having offended a constitutional limitation, it is not the role of the courts to frustrate or change congressional policy choices under the guise of interpreting a statute. The purpose of this brief is to demonstrate to this Court that the case before it is merely one of the more recent examples of the judiciary's attempt to frustrate the well-accepted policy underlying the Comprehensive Environmental Response, Compensation and Liability Act ("CERLCA"), 42 U.S.C. § 9601, *et seq.*, that parties who caused environmental problems should pay for their remediation, and that parties who either did not cause the problem or only caused a portion of the problem should not be responsible for all the liability.

What amicus will demonstrate is that a number of federal courts have developed a simple three-step technique to impose CERCLA liability on parties, not because of what they did, as Congress wished, but because of who they were, and because those courts decided they should pay. The Railroad Petitioners are quite candid about the purpose of the Ninth Circuit which is "to pursue a different conception of public policy" (Pet'r's. Br. 24).

Clearly, these courts have not been candid about their actual intention. However, the parallel conduct between the Ninth Circuit in this case and the other cases described herein puts the real intent of these courts beyond serious dispute.

The process which these courts use involves three steps. The first step is to violate the seminal principle of common law liability, and remove causation as a prerequisite to liability. The second step is to expand definitions that trigger liability to such broad levels that they encompass virtually everything. As the third and final step, these courts create an illusory means of escaping liability that has an aura of fairness, but as a practical matter, can never be established.

This case poses far broader implications than merely the proper construction of CERCLA. It is a case which raises the issue of the p oper role of the courts, and whether courts will be allowed to subvert the constitutional role of Congress, by using crafty argument or rhetoric under the guise of statutory interpretation to substitute their policy choices for those of the Congress.

ARGUMENT

I. ELIMINATING CAUSATION AT THE LIABILITY STAGE IS THE FIRST ELEMENT USED TO SUBSTITUTE THE COURT'S LIABILITY POLICY FOR THAT OF CONGRESS

CERCLA was widely-accepted as a statute whose purpose was to implement a clean-up of pollution by making the parties responsible for the problem, remedy that problem. This concept has been aptly described by the Petitioners, who noted that the Congress declined to enact provisions that would make all covered persons jointly and severally liable and instead chose to rely on common law principles to apportion liability. (Shell Br. 32-37).

However, it is axiomatic that in order for courts to apply common law principles to apportion liability, they must as a prerequisite apply common law principles to assign liability. This case and others which amicus will reference demonstrate that a number of federal courts have largely ignored the common law principles in both assigning liability and apportioning liability. They have done this with a simple objective in mind: to impose CERCLA liability on parties that they believe should be liable regardless of the actual contribution to the environmental problem being remedied.

Critical to any effort to assign or apportion liability under traditional concepts of common law is the notion of causation, a concept that many courts have now routinely rejected in an attempt to create their own liability scheme. In *United States v. Alcan Aluminum Corp.*, 964 F. 2d 252 (3d Cir. 1992), the Third Circuit tried to explain away the explicit use of the word "causation" in the CERCLA liability scheme. *Id.* at 264-66. It argued that the word "causation" in the statute merely requires that a release of hazardous substances cause the response costs, regardless of whether or not they are the defendant's substances. *Id.* All the defendant must do, according to the Third Circuit, to be subject to liability is simply fall into a category of liable party, even if the particular hazardous substance was wholly unrelated to the release or perhaps even remedied a portion of it. *Id.* That was enough to establish liability in *Alcan*.

Under such peculiar logic, a person can dispose of a hazardous substance, sodium hydroxide for example, at a site whose problem is acidic, and be liable if the acidic condition or its consequence, the mobilization

of metals, is released from the site. However, sodium hydroxide is a base and it would actually *remediate* the acidic condition. The result would be to compel a party to pay for the remediation of a site, when its only contribution to the site would have been to partially remediate the condition in the first place. This reasoning is hardly consistent with the principle that *polluters* pay, or with traditional notions of the common law. Rather, it creates a new principle which subsidizes that actual polluter.

The Third Circuit justifies its conclusion rejecting causation by claiming it is the plain meaning of the statute, *id.* at 264—the plain meaning which flips the concept of polluters pay on its head. In fact, the plain meaning which the Third Circuit advocated would render the words in the statute *without* meaning. To argue that causation in the statute means that a liability attaches when a release causes response costs, and not when the party's hazardous substance causes the response costs, is to simply state the obvious. There could never be liability if a release did not cause response costs. What would the liability be for?

Clearly, troubled by the fact that the plain meaning is really not that plain, the Third Circuit offers another explanation – a review of the legislative history, which they claim also supports their view. Notably, the court provides no citation or support from the legislative history to lend credibility to their claim

In fact, the legislative history appears to suggest just the opposite according to the District Court in *United States v. Wade*, 577 F.Supp. 1326 (E.D. Pa. 1983), which explicitly referred to the committee reports on CERLCA, concluding:

> The Committee intends that the usual common law principles of causation, including those of proximate causation should govern the determination of whether a defendant 'caused or contributed' to a release or a threatened release... Thus, for instance, *the mere act of generation or transportation of a hazardous waste or the mere existence of a generator's or transporter's waste in a site with respect to which clean-up costs are incurred would not, in and of itself, result in liability* . . . The Committee intends that for liability to attach under this section *the plaintiff [government] must demonstrate a casual or contributory nexus between the acts of the defendant and the conditions which necessitated response action.*

Id. at 1333-34 (emphasis added).

Some courts, including the Third Circuit, have rationalized the adoption of the elimination of this principle concept of common law liability by claiming that if causation was a requirement to demonstrate liability, it would "underscore the difficulty that CERCLA plaintiffs in a multi-generator site would face." *Alcan*, 964 F.3d 264. The answer is that the problem would be no greater than the problems faced by any plaintiff in a multi-tortfeasor case. We think it highly unlikely that any tortfeasor who suffered an acidic injury could hold the party responsible for a substance with a base pH liable.

However, what makes this position totally incredulous is that proof of causation is essentially required under CERCLA in order to effect a remediation. Plaintiffs are required to undertake a RIFS (Remediation Investigation Feasibility Study), which is required to define all the sources of harm to be

remediated, the routes of release, and the alternative remedies and their feasibility. It is undisputed that the Plaintiffs are obligated to prove the nature of the waste sent to the site. They must demonstrate that it is a hazardous substance. Once they complete that task, even someone with the skill level of a lawyer should be able to match the chemical nature of a particular in-put waste with a similar waste stream that is being remediated, the route of release, and even with some relatively simple math, achieve a reasonably fair allocation, or determine that the input waste is simply irrelevant to the problem being remediated.

The Petitioner's brief expresses the following concern: Joint and several liability without reasonable causal apportionment threatens to sever the liability of CERCLA defendants from the reasons the statute makes them liable. Pet'r's. Br. 24.

The elimination of causation is simply the first step in the Court's attempt to frustrate congressional policy limiting liability of site participants whose waste did not contribute to the harm at all or contributed only to part of the harm, and substitute their personal view as to who should liable. We suggest that certain federal courts, among them the Second and Third Circuits, and in this case, the Ninth Circuit, have determined that CERCLA liability should be imposed based on who they believe should pay, regardless of whether their waste *actually contributed* to the problem.

II. EXPANDING DEFINITIONS OF STATUTORY TERMS TO EVISCERATE CONGRESSIONAL INTENT CREATE THE SECOND CONDITION FOR COURTS TO SUBSTITUTE THEIR POLICY ON LIABILITY

Shell Oil Company neither disposed of any waste at the site nor owned or operated the site. Its only connection was that it sold a new product which was delivered to the site. The Ninth Circuit ensnared Shell into the liability scheme by claiming that it was an arranger, because it could foresee that some of its product might be spilled when unloaded.

Unfortunately, the Ninth Circuit conduct is not unique in CERCLA and is merely the most recent iteration of attempts by many federal courts to construct liability schemes to implement their policy agendas. In *United States v. Alcan Aluminum Corp.*, 990 F.2d 711 (2d Cir. 1993) and *United States v. Alcan Aluminum Corp.*, 964 F.2d 252 (3d Cir. 1992), the Second and Third Circuits did a similar thing. They simply interpreted the term "hazardous substance" so broadly as to include everything in the universe. They even admitted it, acknowledging that "[t]here is some force to Alcan's argument that the definition of hazardous substance is so broad it encompasses virtually everything and thereby eviscerates the meaning of hazardous." 964 F. 2d. at 255, n. 13. *See also*, *Alcan*, 990 F.2d at 716 (2d Cir. 1993).

In the *Alcan* cases, the only hazardous substances were below background levels of common metal compounds, such as copper and zinc, that existed in far higher concentrations in common breakfast cereals such as Kelloggs Special K. These would now be included as CERCLA hazardous substances.

The Ninth Circuit's expansion of "arranger" has the same effect of eviscerating the meaning of the term since suppliers of any product could foresee it that could be spilled or disposed of at some point. *United States v. Burlington Northern & Santa Fe Ry. Co.*, 502 F.3d 781 (9th Cir. 2007).

III. CREATING AN ILLUSORY MEANS TO ESCAPE LIABILITY TO DISGUISE THE JUDICIARY'S INTENT IS THE THIRD WAY TO IMPOSE ITS OWN POLICY FOR THAT OF CONGRESS

The judges who registered their dissent to a rehearing en *banc* in this case noted that the panel had crafted a standard that imposes "impossible-to-satisfy burdens" on CERCLA defendants. (Shell Br. 12.). The Second and Third Circuits in the *Alcan* cases did substantially the same thing.

The Third Circuit adopted the following standard for escaping liability: "In sum . . . if Alcan proves that the emulsion did not or could not when mixed with other hazardous wastes, contribute to the release and resultant response costs, then Alcan should not be liable for any costs." 964 F.2d at 270.

After remand, the EPA completed the RIFS, which described in detail all the hazardous substances and the remedy. It did not identify metals of any kind as a source of a problem at the site. In cross-motions for summary judgment, the trial court did not grant summary judgment in Alcan's favor as one might expect. *United States v. Alcan Aluminum Corp.*, 892 F.Supp. 648 (M.D.Pa. 1995). Instead it created a new legal standard to escape liability that had the requisite characteristic of being incapable of proof. *Id.* In reinstating joint and several liability the District

Court acknowledges that neither the "hazardous substances" or even the emulsion contributed to the response costs, but created an entirely new standard that the waste was not "environmentally benign." *Id.* at 655-56. In doing so, that court explained that "[i]n this case, Alcan presented neither evidence nor argument that its used emulsion was environmentally benign. While the constituents that bring it within CERCLA's ambit may not have contributed to the harm, Alcan has not argued that its used emulsion was harmless." *Id.* at 655.

The simple answer is, of course, it is not harmless; it depends on the exposure conditions since even the water which comprised 95% of the waste can be toxic. The District Court had constructed the very conditions to avoid liability that the *en banc* dissenters described in the case before this court. It devised a legal standard not capable of ever being satisfied. There is no such thing as something that is environmentally benign or harmless any more than a hazardous substance can be described independent of the conditions of exposure. As Professor M Alice Ottoboni states in her book THE DOSE MAKES THE POISON (2d ed. 1997): "Every chemical has a set of exposure conditions in which it is toxic and, conversely every chemical has a set of exposure conditions in which it is not toxic." *Id.* at 25.

Justice Stephen Breyer makes the same point in his book BREAKING THE VICIOUS CIRCLE TOWARDS EFFECTIVE RISK REGULATION (Harvard University Press 1999): "How does risk of harm vary with the person's exposure to that substance? The question is critically important, for as Paraclesus pointed out over four hundred years ago, 'the dose alone determines the poison. Drinking a bottle of iodine is

deadly; putting diluted iodine on a cut is helpful.'" *Id.* at 9 (footnote omitted).

Even water is toxic if consumed in large quantities; a boy at the State University of New York died from being forced to drink too much water as fraternity prank *See* Alex Cuken, May 3, 2003, *available at* http://www.upi.com/.cfm?StoryID=20030503-034748-7643r.

Thus, even though Alcan could establish that its waste did cause the response costs at the site, it could never prove its waste was environmentally benign any more than it could prove that pure water is environmentally benign. A different panel at the Third Circuit affirmed the District Court without opinion, 96 F.3d 1434 (1996), and this Court denied certiorari, 521 U.S. 1103 (1997).

The Second Circuit achieved the same result for the Alcan waste emulsion by somewhat different means. It had established an exception to the liability scheme that was limited to substances that were below background concentrations. When it became clear that the Alcan was going to establish that the metals in its waste were below background, the government tried to insert into PCB's into the emulsion. However, even if PCB's were in the waste it was undisputed that they were not above background levels. In fact, PCB's are ubiquitous in the environment, even the polar ice caps. *See* WASHINGTON POST, May 17, 2001 at A17. PCBs travel naturally in "ocean currents, or in the winds falling in places where they have never been used . . . . More that 6 tons of PCBs reach the Artic each year this way." *Id.*

Faced with this dilemma, the potential that Alcan would escape liability, the Second Circuit quickly re-

crafted its below-background exception to liability to add an exception to that exception. *Alcan*, 990 F.2d 711. The court said that the exception did not apply to manmade substances—a condition that did not exist in its original decision. *Id.* at 716. Since all manmade substances have background levels, otherwise waste streams could not have concentrations that were the same or lower. The Second Circuit now constructed an exception that could never be attained.

The Ninth Circuit's obvious effort to reject every reasonable basis of apportionment identified by the District Court in this case, geographical allocation, temporal allocation, and distinctions among contaminants, has a character that is more than vaguely reminiscent of the objective of the courts in the Alcan cases—reject any standard that has any prospect of limiting the defendant's liability.

* * * *

By eliminating traditional common law concepts of causation, the courts expand the potential range of responsible parties. By expanding traditional meanings of words that describe classes of potentially responsible parties, the courts have further undermined the limitation to liability intended by Congress. And finally, by creating faux exceptions to liability that create the illusion that a court is being fair, the courts have been able to implement their policy choices as to who should be liable.

Do courts engaged verbal calisthenics to achieve ignoble ends? Judge Richard A. Posner in his book OVERCOMING LAW (Harvard University Press 1995), expresses that concern most eloquently in his chapter entitled "The Profession in Crisis": "[E]xtraordinary

plasticity of legal rhetoric . . . . enables a clever judge to find a plausible form of words to clothe virtually any decision." *Id.* at 157.

Why would courts subvert Congressional intent? Wilbur Ross explains in his book MUTED FURY—POPULISTS, PROGRESSIVES, AND LABOR UNIONS CONFRONT THE COURTS, 1890-1937 (Princeton University Press 1994):

> The fact that courts have failed to apply legal doctrine in a manner consistent with traditional expectations and instead have yielded to the perceived public sentiment of the day is not new, nor is it a phenomenon that is likely to disappear as long as men and women occupy the bench: "A court is sometimes so swayed consciously, more often unconsciously because the pervasive sympathy of numbers is irresistible even by elderly lawyers."

Id. at 315.

However, understanding how and why the courts have been subverting Congress' intent to limit CERCLA liability, does not excuse the conduct.

CONCLUSION

Amicus respectfully asks this Court to reverse the Ninth Circuit and to make it clear to all federal courts that not applying the intent of Congress in the context of statutory interpretation, no matter how noble they believe to be their motive, is not merely reversible error, but it is conduct that undercuts both the legitimacy of and respect for the judicial system.

Respectfully submitted,

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November 24, 2008